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FM 9-5

DEPARTMENT OF THE ARMY FIELD MANUAL

**ORDNANCE SERVICE
IN THE
FIELD**

**RECORDED
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DEPARTMENT OF THE ARMY

•

JANUARY 1955

FOREWORD

The success of ordnance service in the field is more dependent upon the efficiency of management than upon any other factor. The three basic elements of management are *organization*, *planning*, and *control*. In this manual, these basic elements are further subdivided and are dealt with in isolation in order to make clear some of the specific types of consideration existent within the field of management. In no case, however, should any of the basic elements or basic principles be understood to exist as separate and distinct functions. In actual practice, there is a great deal of overlap between and among them. When one element or principle becomes involved, it automatically involves the others.

Ordnance staff officers will study the basic principles set forth in this manual and will use them as a guide for the management of ordnance service in the field. It must be remembered, however, that basic facts or laws in any field are impersonal. Their execution or administration almost always involves leadership characteristics on which success or failure depends. There must be an art of management to accompany and include the science of management. The phrase, *art of management*, as used here, is meant to convey the meaning and the application of basic organizational and economic laws which underlie the field of management. This ability is composed of three essential parts—first, a comprehensive knowledge of underlying principles; second, skill in the application of these principles; and third, the ability to deal with people.

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No. 9-5

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 10 January 1955

ORDNANCE SERVICE IN THE FIELD

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*This manual supersedes FM 9-5, 11 July 1942; including C1, 21 August 1943; C2, 17 September 1943; C3, 30 December 1943; C4, 19 February 1944; C5, 18 February 1944; and C6, 29 July 1944.

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PART ONE
ORGANIZATION AND PLANNING
CHAPTER 1
GENERAL

Section I. INTRODUCTION

1. Purpose and Scope

This manual is intended as a guide for ordnance staff officers, commanders, and other interested personnel concerned with the management of ordnance service in the field. It deals with planning, organization, and control, bridging the gap existing between other ordnance field manuals on this subject (FM's 9-6, 9-10, and 9-40).

2. Mission of Ordnance Service

Success in battle depends on manpower, mobility, and fire power. The potential mobility and fire power of any command is dependent, to a great extent, on the ordnance service within the command. Ordnance service performs many functions in assuring this mobility and fire power. Its primary function is to provide serviceable ordnance materiel to the user at the time and place demanded by the tactical situation.

3. Responsibility of Ordnance Service

The responsibility for providing adequate ordnance service rests with the Chief of Ordnance. This is basically a supply function. After procurement, manufacture, or rebuild, supplies are stored at ordnance Class II installations. Stock control and distribution control of supplies located within the continental United States are directly under the Chief of Ordnance. When supplies are shipped from a Class II installation to a Class I installation in the continental United States or to an oversea theater, control passes from the Chief of Ordnance to a tactical commander. In either case, however, responsibility for technical supervision of all ordnance activities rests with the Chief of Ordnance. Operation of ordnance service within a major command rests with the commander of that command.

4. Ordnance Service in the Field—Defined

Ordnance service in the field is that part of the responsibility of the Ordnance Corps which is discharged by the ordnance staffs of field commanders and by ordnance troop units.

5. Application

Many of the principles of ordnance service as set forth in this manual have equal application to continental United States as well as oversea theater operations. All commanders, their staffs, and ordnance staff officers are enjoined to observe the principles of ordnance service presented in this manual to the extent compatible with current administrative regulations. For mobilization training, and especially in training centers during field exercises and arms training phase of large units, it is essential that ordnance service in the field be managed according to the principles outlined herein. Adherence to these principles will insure efficient training of ordnance personnel and personnel of the arms and the other services in the capabilities and limitations of ordnance service in the field.

6. Scope of Ordnance Service

The scope of ordnance service in the field is limited only by the availability of skill, resources, and time. The scope of maintenance, or the restriction on the issue of a particular item of supply, may be modified by ordnance staff officers in the field within the scope of their authority whenever such action will result in improved ordnance services. Ordnance service in the field includes the following functions:

a. Supply and Maintenance.

- (1) Acquisition, distribution, and issue of ordnance general supplies.
- (2) Distribution of common items of ordnance to Navy and Air Force units or depots to the extent directed by competent authority.
- (3) Recovery, maintenance, evacuation, and reclamation of ordnance materiel beyond the capabilities of personnel, equipment, and facilities available and organic to the using units or organizations of the army.
- (4) Modification of ordnance materiel in an oversea theater when approved by theater commander and is essential to operations or vital to safety.
- (5) Depot maintenance of common items of ordnance materiel in the hands of Navy and Air Force units in areas for which the army is responsible for logistical support.

- (6) Information on current availability, and expected replenishment rates on ordnance supply, and the probable effect of these on the current and proposed operations.
- (7) Acquisition, distribution, and issue of ordnance Class V supply to units within the army.
- (8) Distribution of designated items of army ordnance Class V supply to Navy and Air Force units or depots to the extent directed by competent authority.
- (9) Provision of ammunition renovation service, personnel, and facilities.
- (10) Recommendations for the exploitation of local resources and the utilization of captured enemy materiel to supplement normal supply.

b. Technical Guidance and Supervision.

- (1) Advice to appropriate commanders on the characteristics, capabilities, limitations, and standards of serviceability of materiel and approved methods of operation and preventive maintenance.
- (2) Technical supervision, to the extent approved by each appropriate commander, of activities within non-ordnance units concerned with operation, maintenance, and preservation of ordnance equipment and supplies, to assure adherence to approved methods, prevention of abuse, and the maintenance of adequate standards of preventive maintenance.
- (3) Collection and reclamation of captured or abandoned ordnance supplies and equipment.
- (4) Technical inspection of ordnance materiel, including ammunition, to discover and establish condition and serviceability and to insure proper preservation, maintenance, and safety.
- (5) Operation of the army explosive ordnance disposal service.
- (6) Operation of the ordnance technical intelligence service.
- (7) Operation of the ballistic and technical service.
- (8) Operation of the ordnance technical assistance service.

7. Policies and Limitations

The responsibilities of ordnance service within major forces and oversea commands as applied to different general situations are further defined and delineated by the following provisions:

a. Ordnance Troops.

- (1) Ordnance troops or troop units normally will be attached or assigned only to commands having a duly designated ordnance officer on the staff of the commander. Normally, they will not be attached to purely tactical commands.
- (2) When, for adequate reason, it becomes essential to attach ordnance troops temporarily to a command not having an ord-

nance officer, the senior ordnance officer present for duty with the troops so attached will act as ordnance officer on the staff of the commander during the period of such attachment.

b. Supply and Procurement.

- (1) Armies and oversea commands normally will be issued ordnance supplies and materiel in bulk. In active operations, armies are responsible for the receipt, storage, and distribution of supplies within their respective commands.
- (2) Army groups establish priorities and allocations between the armies under their control.
- (3) Procurement by ordnance service within major commands other than through requisition in ordnance supply channels normally is limited to items not available through normal supply but are obtainable in the local market. During operations, armies will exploit manufacturing resources within their respective combat areas to the maximum practicable extent. The theater ordnance officer will be kept informed of such exploitation, and manufacturing establishments concerned will be turned over to his jurisdiction at the earliest possible time.

8. Ordnance Units

a. Principal troop units required for ordnance service in the field are provided for in standard TOE. They can be divided according to mission. The mission may be one of command, control, supply, maintenance, combined supply and maintenance, or special. For a listing of units under each class, see figure 1.

b. Type B TOE are published as a guide for the integration of auxiliary personnel. These tables are essentially the same as the basic table but reflect only the minimum military supervisory and technical personnel required. In general, this means a drastic reduction of unskilled or semiskilled military personnel from the table.

| TOE | Title | Category* | | Com- mand | Con- trol | Sup- ply | Main- tenance | Spe- cial |
|-----------|---|-----------|-------|--------------|--------------|-------------|------------------|--------------|
| | | II | III | | | | | |
| 9-7----- | Ordnance Direct Support Company. | X | ----- | ----- | ----- | X | X | ----- |
| 9-9----- | Ordnance Heavy Maintenance Company. | X | ----- | ----- | ----- | ----- | X | ----- |
| 9-12A---- | Headquarters and Headquarters Company, Ordnance Group, Maintenance and Supply Ammunition. | X | X | X | ----- | ----- | ----- | ----- |
| 9-17----- | Ordnance Ammunition Company, Army. | X | ----- | ----- | ----- | X | ----- | ----- |

Figure 1. Ordnance units.

| TOE | Title | Category* | | Command | Control | Supply | Maintenance | Special |
|------------|---|-----------|-------|---------|---------|--------|-------------|---------|
| | | II | III | | | | | |
| 9-25----- | Ordnance Battalion, Infantry Division. | X | ----- | X | ----- | X | X | ----- |
| 9-26----- | Headquarters and Headquarters Detachment, Ordnance Battalion, Infantry Division. | X | ----- | X | ----- | | | ----- |
| 9-27----- | Ordnance Company, Forward, Ordnance Battalion, Infantry Division. | X | ----- | | | X | X | ----- |
| 9-28----- | Ordnance Company, Rear, Ordnance Battalion, Infantry Division. | X | ----- | | | X | X | ----- |
| 9-35----- | Airborne Ordnance Battalion. | X | ----- | X | ----- | X | X | ----- |
| 9-36----- | Headquarters and Headquarters Detachment, Ordnance Battalion, Airborne Division. | X | ----- | X | ----- | | | ----- |
| 9-37----- | Ordnance Company, Forward, Ordnance Battalion, Airborne Division. | X | ----- | | | X | X | ----- |
| 9-38----- | Ordnance Company, Rear, Ordnance Battalion, Airborne Division. | X | ----- | | | X | X | ----- |
| 9-45A----- | Ordnance Special Weapons Support or Depot Battalion (Tentative). | X | ----- | X | ----- | X | X | ----- |
| 9-46A----- | Headquarters and Headquarters Detachment, Ordnance Special Weapons Battalion (Tentative). | X | ----- | X | ----- | | | ----- |
| 9-47A----- | Ordnance Special Weapons Company (Tentative). | X | ----- | | | X | X | ----- |
| 19-77----- | Military Police Security Company (Tentative). | X | ----- | | | | | X |
| 9-49----- | Ordnance Special Weapons Direct Support Company (Tentative). | X | ----- | | | X | X | ----- |
| 9-57A----- | Ordnance Field Supply Company. | X | ----- | | | X | | ----- |
| 9-65----- | Armored Ordnance Battalion. | X | ----- | X | ----- | X | X | ----- |
| 9-66----- | Headquarters and Headquarters Company Armored Ordnance Battalion. | X | ----- | X | ----- | | | ----- |
| 9-67----- | Company Armored Ordnance Battalion. | X | ----- | | | X | X | ----- |
| 9-76A----- | Headquarters and Headquarters Detachment, Ordnance Battalion. | X | ----- | X | ----- | | | ----- |

Figure 1—Continued.

| TOE | Title | Category* | | Com- mand | Con- trol | Sup- ply | Main- tenance | Spe- cial |
|------------|---|-----------|-------|--------------|--------------|-------------|------------------|--------------|
| | | II | III | | | | | |
| 9-97----- | Ordnance Maintenance Com- pany, Amphibious Support Brigade. | X | ----- | ----- | ----- | X | X | ----- |
| 9-127----- | Ordnance Direct Automotive Support Company. | X | ----- | ----- | ----- | X | X | ----- |
| 9-137A--- | Ordnance Artillery and Vehi- cle Park Company. | X | ----- | ----- | ----- | X | ----- | ----- |
| 9-167A--- | Ordnance Recovery and Clas- sification Company. | X | ----- | ----- | ----- | X | X | ----- |
| 9-197----- | Ordnance Heavy Automotive Maintenance Company. | X | ----- | ----- | ----- | ----- | X | ----- |
| 9-228----- | Ordnance Company (Guided Missile Direct Support Com- pany Corporal) (Tentative). | X | ----- | ----- | ----- | X | X | ----- |
| 9-229----- | Ordnance Company (Guided Missile Direct Support Company, Nike) (Ten- tative). | X | X | ----- | ----- | X | X | ----- |
| | COMMUNICATION ZONE TOE | | | | | | | |
| 9-315A--- | Ordnance Armament Rebuild Battalion. | ----- | X | X | ----- | ----- | X | ----- |
| 9-316A--- | Headquarters, Headquarters and Service Company, Ord- nance Armament or Auto- motive Rebuild Battalion. | ----- | X | X | ----- | ----- | X | ----- |
| 9-317A--- | Ordnance Combat Vehicle Re- build Company. | ----- | X | ----- | ----- | ----- | X | ----- |
| 9-318A--- | Ordnance Armament and Fire Control Rebuild Company. | ----- | X | ----- | ----- | ----- | X | ----- |
| 9-319A--- | Ordnance Engine and Power Train Rebuild Company. | ----- | X | ----- | ----- | ----- | X | ----- |
| 9-325A--- | Ordnance Automotive Rebuild Battalion. | ----- | X | X | ----- | ----- | X | ----- |
| 9-327A--- | Ordnance Engine Rebuild Company. | ----- | X | ----- | ----- | ----- | X | ----- |
| 9-328A--- | Ordnance Power Train Re- build Company. | ----- | X | ----- | ----- | ----- | X | ----- |
| 9-347----- | Ordnance Tire Repair Com- pany. | ----- | X | ----- | ----- | ----- | X | ----- |
| 9-348A--- | Ordnance Company (Motor Vehicle Assembly). | ----- | X | ----- | ----- | X | ----- | ----- |
| 9-357A--- | Ordnance Company (Field Maintenance). | ----- | X | ----- | ----- | X | X | ----- |
| 9-358A--- | Ordnance Company (Collect- ing Point). | ----- | X | ----- | ----- | X | ----- | ----- |
| 9-359A--- | Ordnance Park Company----- | ----- | X | ----- | ----- | X | ----- | ----- |

Figure 1—Continued.

| TOE | Title | Category* | | Com- mand | Con- trol | Sup- ply | Main- tenance | Spe- cial |
|------------|---|-----------|-------|--------------|--------------|-------------|------------------|--------------|
| | | II | III | | | | | |
| | COMMUNICATION ZONE TOE—Continued | | | | | | | |
| 9-367----- | Ordnance Supply Depot Com- pany. | ----- | X | ----- | ----- | X | ----- | ----- |
| 9-375----- | Ordnance Special Weapons Battalion, Depot (Tenta- tive). | ----- | X | ----- | ----- | X | ----- | ----- |
| 9-376----- | Headquarters and Headquar- ters Detachment, Ordnance Battalion, Special Weapons Depot (Tentative). | ----- | X | X | ----- | ----- | ----- | ----- |
| 9-377----- | Ordnance Company, Ordnance Battalion, Special Weapons Depot (Tentative). | ----- | X | ----- | ----- | X | ----- | ----- |
| 19-177---- | M. P. Security Company, Ordnance Battalion, Special Weapons Depot (Tentative). | ----- | X | ----- | ----- | ----- | ----- | X |
| 9-387----- | Ordnance Ammunition Depot Company. | ----- | X | ----- | ----- | X | ----- | ----- |
| 9-500----- | ORDNANCE SERVICE ORGANIZATION. | X | X | ----- | ----- | ----- | ----- | ----- |
| | PART I. ADMINISTRA- TIVE DETACHMENT | | | | | | | |
| 9-500----- | Detachment AA Platoon Head- quarters, Component of Company. | ----- | ----- | X | ----- | ----- | ----- | ----- |
| 9-500----- | Detachment AB Platoon Head- quarters, Separate. | ----- | ----- | X | ----- | ----- | ----- | ----- |
| 9-500----- | Detachment AC Company Headquarters. | ----- | ----- | X | ----- | ----- | ----- | ----- |
| | PART II. SUPPLY AND EVACUATION DETACH- MENT | | | | | | | |
| 9-500----- | Detachment BA General Sup- ply, Basic. | ----- | ----- | ----- | ----- | X | ----- | ----- |
| 9-500----- | Detachment BB General Sup- ply, Augmentation. | ----- | ----- | ----- | ----- | X | ----- | ----- |
| 9-500----- | Detachment BC Ammunition Supply, Basic. | ----- | ----- | ----- | ----- | X | ----- | ----- |
| 9-500----- | Detachment BD Ammunition Supply, Augmentation. | ----- | ----- | ----- | ----- | X | ----- | ----- |
| 9-500----- | Detachment BE Recovery | ----- | ----- | ----- | ----- | X | ----- | ----- |

Figure 1—Continued.

| TOE | Title | Category* | | Com- mand | Con- trol | Sup- ply | Main- tenance | Spe- cial |
|-----------|--|-----------|-----|--------------|--------------|-------------|------------------|--------------|
| | | II | III | | | | | |
| | PART III. VEHICLE MAINTENANCE DE- TACHMENT | | | | | | | |
| 9-500---- | Detachment CA Wheel Ve- hicle Repair, Basic. | | | | | | X | |
| 9-500---- | Detachment CB Wheel Ve- hicle Repair, Augmentation. | | | | | | X | |
| 9-500---- | Detachment CC Track Ve- hicle Repair, Basic. | | | | | | X | |
| 9-500---- | Detachment DC Tire Repair. | | | | | | X | |
| | PART IV. ARMAMENT MAINTENANCE DE- TACHMENT | | | | | | | |
| 9-500---- | Detachment DA Artillery Re- pair. | | | | | | X | |
| 9-500---- | Detachment DB Fire Control Repair. | | | | | | X | |
| 9-500---- | Detachment DC Small Arms Repair. | | | | | | X | |
| 9-500---- | Detachment DD Ordnance Detachment GM Mainte- nance (SAM) (NIKE). | X | X | | | | X | |
| 9-500T--- | STOCK CONTROL DE- TACHMENTS | | | | | | | |
| 9-500T--- | Detachment A Stock Control (Ammunition) Manual Posting. | | | | | X | | |
| | Detachment B Stock Control (Ammunition) Manual Posting. | | | | | X | | |
| 9-510---- | ORDNANCE SPECIAL- IZED SERVICE DE- TACHMENT. | X | X | | | | | |
| | PART I. EXPLOSIVE ORDNANCE DISPOSAL DETACHMENT | | | | | | | |
| 9-510---- | Detachment AA Explosive Ordnance Disposal, Basic. | | | | | | | X |
| 9-510---- | Detachment AB Explosive Ordnance Disposal, Aug- mentation. | | | | | | | X |
| 9-510---- | Detachment AC Explosive Ordnance Disposal Control. | | | | X | | | |

Figure 1—Continued.

| TOE | Title | Category* | | Com- mand | Con- trol | Sup- ply | Main- tenance | Spe- cial |
|------------|--|-----------|-------|--------------|--------------|-------------|------------------|--------------|
| | | II | III | | | | | |
| | PART II. BALLISTIC, TECHNICAL SERVICE AND INTELLIGENCE DETACHMENT | | | | | | | |
| 9-510..... | Detachment BA Ballistic and Technical Service. | ----- | ----- | ----- | ----- | ----- | ----- | X |
| 9-510..... | Detachment BB Technical In- telligence. | ----- | ----- | ----- | ----- | ----- | ----- | X |
| 9-510..... | Detachment BC Technical In- telligence Control. | ----- | ----- | ----- | X | ----- | ----- | ----- |
| | PART III. ARMAMENT MAINTENANCE DETACHMENT | | | | | | | |
| 9-510..... | Detachment CA Heavy Anti- aircraft Artillery Repair. | ----- | ----- | ----- | ----- | ----- | X | ----- |
| 9-510..... | Detachment CB Heavy Anti- aircraft Artillery Repair, Augmentation. | ----- | ----- | ----- | ----- | ----- | X | ----- |
| 9-510..... | Detachment CC Integrated Fire Control Repair M33. | ----- | ----- | ----- | ----- | ----- | X | ----- |
| 9-510..... | Detachment CD Integrated Fire Control Repair T38. | ----- | ----- | ----- | ----- | ----- | X | ----- |
| 9-510..... | Detachment CE Integrated Fire Control Repair, Aug- mentation. | ----- | ----- | ----- | ----- | ----- | X | ----- |
| 9-510..... | Detachment CF Heavy Ar- tillery Material Repair. | ----- | ----- | ----- | ----- | ----- | X | ----- |
| | PART IV. AMMUNITION DETACHMENT | | | | | | | |
| 9-510..... | Detachment DA Ammunition Renovation. | ----- | ----- | ----- | ----- | ----- | X | ----- |
| 9-510..... | Detachment DB 762MM Rocket Support (Tenta- tive). | ----- | ----- | ----- | ----- | X | X | ----- |
| 9-510..... | Detachment DC 762MM Rocket Support (Tenta- tive). | ----- | ----- | ----- | ----- | X | ----- | ----- |

*Some units may function either as Category II or Category III. For definition of category, see SR 310-30-4.

Figure 1—Continued.

9. Composite Organizations

Ordnance composite organizations are authorized by TOE 9-500 and 9-510. These tables of organization and equipment consist of a number of cellular type units covering the entire field of ordnance service. They may be employed as individual units or may be grouped together in any suitable combination to form a composite organization. The specific composition will be established by the order activating the organization. The principal use of composite organizations will be to furnish ordnance service for a task force or to operate as special ordnance organizations, the requirements for which may be so varied as not to warrant the standardization of any one composition.

a. TOE 9-500 cellular type units are provided to perform normal ordnance service functions where units of less than company size are required and to increase the productive capacity of fixed strength units when increments of less than company size are needed.

b. TOE 9-510 cellular type units are provided to perform ordnance specialized service functions where units of less than company size are required and to increase the productive capacity of fixed strength units where increments of less than company size are needed. Detachments in this table are specialized detachments. They are the only units to perform specialized ordnance service.

Section II. PRINCIPLES OF ORGANIZATION

10. General

a. Organization exists when two or more persons interdependently combine their actions to achieve a common objective. An analysis of the various broad categories of organized human endeavor will reveal that although many factors contribute to the molding of organizational structures, certain factors are common to all effective associations. When such a factor is found to be applicable to the development of a sound organizational structure, it may be considered a principle of sound organization.

b. History bears witness to the practicality of the art of organizing. Whether the principles of sound organization were consciously or unconsciously applied by great organizers of history, inclusion of the principles was inherent to the technique employed. When these principles were incorporated, the resulting organization proved to be an efficient instrument for the accomplishment of its mission.

c. Different segments of the organizational process have been variously described as principles. Close analysis, however, shows that no fundamental variance exists in basic concept, differences being largely a matter of classification. The selection of principles discussed herein considers the criteria of essential characteristics, comprehensiveness and completeness, simple and self-explanatory terms, and their

ability to be readily tested. On this basis, the following four principles of sound organization are accepted:

- (1) Unity of command.
- (2) Span of control.
- (3) Homogeneous assignment.
- (4) Delegation of authority.

d. Development of sound organization can be acquired more readily if these underlined principles are recognized and understood. In comparing principles, all of which are necessary, it is virtually impossible to say that one is more important than another.

11. Unity of Command

a. Control of all actions relating to the accomplishment of an objective is vested in one individual at each level of control. This is unity of command, one boss at each controlling level. This principle provides for the establishment of a definite chain of command and the effective control of subordinates. Two corollaries are involved in this concept.

- (1) The first corollary is "Know Your Supervisor." In order that any individual may satisfactorily perform his duties, it is absolutely necessary that he knows to whom he reports. This basic idea often is ignored or misunderstood and relationships frequently are unsatisfactory to a degree that efficiency is seriously impaired.
- (2) The second corollary is "Know Your Subordinates." The supervisor must know whom he directs. He must know who is working for and aiding him in accomplishing a particular job. Moreover, a detailed knowledge of whom he directs enables a supervisor to delegate authority.

b. In spite of the logic of the principle of unity of command, violations are numerous. In their enthusiasm to get a job done, individuals frequently bypass their immediate superiors, many take measures to make corrections on the spot, whether or not it is within the province of their supervision. Another type of violation is the shirking of responsibilities, commonly known as "passing-the-buck." A third type of violation is that occasioned by an individual with an exaggerated sense of authority and who believes that by virtue of his position he is not required to inform his supervisor of any action that he might take within his supervisor's province. In certain critical circumstances, violations may be considered necessary if the responsible supervisor is immediately informed of the action taken.

c. Unity of command is insured within an organization by establishing definite lines of authority which are clear cut and understood by all. Every individual should be indoctrinated with the fundamental concept of "one boss at each level." This indoctrination may be ac-

complished by the use of proper organizational charts and by constant check to see that they are being followed. A further aid in the indoctrination of personnel is to be found in a functional listing of duties and responsibilities of all individuals within the organization.

12. Span of Control

a. General. The number of individuals or activities capable of being effectively controlled by one supervisor is known as the span of control.

- (1) In all supervisory positions, there are three limiting factors which must be carefully considered in establishing an organization which can be effectively controlled.
 - (a) The factor of the number of personnel under supervision.
 - (b) The space or distance factor.
 - (c) The time factor.
- (2) Discussion of the principle of span of control is divided into three parts:
 - (a) Span of control—individuals.
 - (b) Span of control—distance.
 - (c) Span of control—time.

b. Span of Control—Individuals. In considering span of control—individuals, experience has developed the concept that in a military organization a supervisor should manage not less than three nor more than seven subordinate supervisors. If he supervises less than three, full advantage of his own capabilities has not been made. If he supervises more than seven, he may not be managing efficiently because there is too great a strain on his energy and ability.

- (1) The prime reason for limiting the number of personnel or units under supervision lies in the number of relationships that exist between the supervisor and his subordinates and between the subordinates themselves. When a small number of subordinates are being supervised, the situation is relatively easy to cope with because of the relatively few relationships involved. It must be borne in mind that, as subordinates are added, the number of relationships increase in geometric progression. For example, in a situation where seven subordinates are being supervised, the number of possible relationships increases to a total of 617!
- (2) It should be noted that this particular division of the principle of span of control applies primarily to the span of “executive” and “operational” control. Jobs which merely require supervision of machines, and jobs which contain a high number of repetitive elements are frequently exceptions, in that greater numbers of such subordinates can be effectively controlled by one supervisor. The personality and

general abilities of the supervisor are also factors to be considered. These factors frequently explain why one man can supervise ten activities fairly well and another man breaks down under the same load.

c. Span of Control—Distance. The second phase of the principle, span of control—distance, deals with the physical area of supervision. This implies the locating of subordinates, installations, and activities in such manner as to permit ease of supervision.

- (1) If the activities which are to be supervised require frequent personal contact, then the question of the accessibility of these activities must be considered in organizing and locating them. The matter of their distance from the supervisor will have considerable bearing on how well he is able to do his job. If the activities are dispersed, the time required to travel to these activities is excessive and the transportation required is wasteful. When the distance between a supervisor and activities is increased to such an extent that he wastes energy and resources, his effectiveness is reduced.
- (2) It may be as unwise to locate a subordinate too close to the supervisor as it is to locate him too far away. It is a natural tendency for a supervisor to over-supervise those men who are located nearest to him. This over-supervision means interference with the work of the subordinate and frequently results in stifling him to such an extent that he becomes a man who does only what he is told to do and nothing more. Locating him too far away, on the other hand, may result in under-supervision; and the subordinate begins to operate independently to such a degree that the influence of the supervisor becomes incidental.
- (3) The optimum distance between the supervisor and the subordinate is that distance which minimizes both over-supervision and under-supervision. Determination of this optimum distance becomes a matter of good judgment rather than one of measurement.
- (4) With communication made easy by such things as the telephone, the teletype, etc., this principle must be applied with varying emphasis by different echelons. In the lower echelons, where close, physical supervision is required continuously, emphasis should be placed on locating activities so that supervision is made as easy and as economical as possible. In major commands, emphasis may shift and be placed on geographic, political, transportation, supply, and other factors which affect movement of materiel and personnel. In every case, however, ease of proper supervision should be of primary consideration.

d. Span of control—Time. The third phase of the principle is span of control—time. This phase of the principle deals with the control of time available to the supervisor. The application is based upon the fact, not that the supervisor controls time, but that he controls the way in which he uses it.

- (1) Every supervisor's job consists of four principal types of work—routine, regular, special, and creative. There is a certain amount of routine work in every supervisory position which should be performed, so far as possible, by subordinates. Regular work consists of such duties as normal supervision of activities and those duties which can be performed only by the supervisor. Special work is that assigned to the supervisor by his superior or initiated by himself. Creative work is that which is done to improve the quality and quantity of routine, regular or special work, and is the work which assures progress in an organization.
- (2) The principle of span of control—time implies that the supervisor should control his use of time in order to effect accomplishment of all the work—routine, regular, special, and creative—with which he is charged. Such control presupposes the use of a time budget or time schedule. Routine work should be kept to an absolute minimum and should be assigned to subordinates when possible. Regular work should be carefully scheduled and time allocated to each activity in proportion to its relative importance. Special work is a recurring factor in the military profession and time must be provided for it. Creative work is also necessary and time must be set aside to continuously devise new policies and improve methods.

e. Balance. A proper balance of the three factors—individuals, distance, and time—is necessary in any supervisory position if the principle of span of control is to be satisfied. In most situations these three factors can be adjusted to the proper balance by the supervisor with respect to his situation.

13. Homogeneous Assignment

a. The grouping of comparable activities in the assignment of appropriate individuals within these groupings, in accordance with their abilities and capabilities, results in homogeneous assignment.

b. There are two phases in the application of this principle—the organizing phase and the personnel assignment phase. In the organizing phase, the principle is applied by the arrangement of functions and relationships within the structural framework of the organization. In the personnel assignment phase, the principle is applied through the assignment of personnel, based on their abilities and

capabilities, to perform the homogeneously grouped functions of the organization.

- (1) In the organizing phase, the principle is applied to the establishment of a grouping of allied or similar functions and entails two vital factors: Homogeneous grouping, and the assignment of specific duties which do not overlap. This is done by—
 - (a) Grouping broad activities of a similar nature under one organizational unit.
 - (b) Grouping in a division within the unit activities *closely related* to one another.
 - (c) Grouping into subdivisions within the division those activities *more closely related* to one another.
 - (d) Grouping under individuals within the subdivisions those duties which are *specifically related* to one another.
- (2) In the personnel assignment phase, this principle is predicated upon the fact that every individual in accomplishing a task utilizes a basic knowledge or skill. In assigning an individual to a job, or assigning additional responsibilities to an individual, more efficient results will be obtained if the job calls for a whole or partial utilization of a basic knowledge and skill he already possesses. The army classification and assignment system is based upon this personnel assignment phase.
 - (a) If an individual is assigned more than one task, the knowledge and skill to accomplish the first should aid in the performance of the second. If he is assigned a third task, the knowledge and skill required in the first and second should aid in the accomplishment of the third.
 - (b) One method which can be used in determining whether two or more tasks are composed of duties which are complementary to each other is through an analysis of the job composition of the tasks. This is true whether the job is that of a commander, a staff officer, or a common laborer. Every job should be carefully analyzed by competent personnel in order to be certain that the job functions are similar and meet the capabilities of the individual to whom assigned.
 - (c) There is a limit to the variety of jobs a person can successfully accomplish. An individual may be considerably overtaxed because of the many unrelated details he is supposed to be taking care of in addition to his primary duty. This practice of assigning varied secondary duties for subordinates is a common fault at all levels of management and is particularly prevalent in the lower supervisory fields.

(3) In the final analysis, application of these two phases of the principle of homogeneous assignment will provide—

- (a) Assurance of proper assignments or the “right man on the right job.” This is extremely important when it is realized that many thousands of officers and enlisted men have claimed they have been improperly assigned and classified. Consequently, their morale and efficiency suffer commensurate with their grievances.
- (b) Higher efficiency and the speeding up of training by limiting the range of work.
- (c) Placing of responsibility and the opportunity to give credit for accomplishment and the elimination of failure. In spite of its importance, the fact remains that inefficiency exists in many military organizations because of the failure of commanders or supervisors to apply this principle.

c. The principle “Homogeneous Assignment” is applied throughout the organization of ordnance service by assigning ammunition companies, depot companies (General Supply) and maintenance companies to separate battalions by type organization or functional grouping to meet the requirements of a particular support mission. These battalions, in turn, are assigned to groups on a functional basis.

14. Delegation of Authority

Whenever one of authority deputizes a subordinate to represent him and vests this subordinate with sufficient authority to act, a principle of sound organization has been applied. This principle is called delegation of authority. It is the application of this principle which motivates an organization and without which it would have no initiative. Delegation of authority might well be compared to the electric power emanating from a central generating plant which sets otherwise idle motors to work.

a. A great deal of confusion has always surrounded the meaning of the terms *authority* and *responsibility* as applied to organization. In order to understand the principle of delegation of authority, it is necessary to consider the following:

- (1) Authority is the legal or rightful power to command or to act. It is the power exercised by the individual by virtue of his office.
- (2) Responsibility is not a power. It is the state of being accountable or answerable for the trust accorded one and which one is obligated to discharge. It comes into being at the time the power to act is given.

b. Delegation of authority is at the will and to the extent desired by the commander whether he organizes on functional, commodity, or other lines. It must be emphasized, that whenever he establishes an

area of operations and places a subordinate to get results, no matter how narrow or broad the area of operation may be, the commander should retain for himself that authority which is necessary to oversee, check, and direct the work of his subordinates.

- (1) Responsibility cannot be deputized or delegated; it must be created. Each time authority is delegated, an equal amount of responsibility is created. Failure to understand this process of creation of responsibility has resulted in inefficiency within military organizations.
- (2) Since responsibility is the state of being accountable to higher authority for certain acts or performances, it is necessary that such responsibility be clearly defined. Each individual must know the extent of his duties. He must know the areas within which he is responsible for making decisions. Responsibility, poorly defined and hazy in the minds of individuals concerned, stifles the entire organization. In many instances, inefficiency within organizations is attributable to—*First*, failure on the part of the commander to clearly define responsibilities of subordinates. *Second*, failure of individuals to accept their responsibilities fully in connection with the authority vested in them. *Third*, individuals being held responsible without the authority or power to get results.
- (3) The commander may hold his subordinates responsible to himself for carrying out the respective phase of action assigned to each; he may delegate to his subordinates the authority required to accomplish the assigned task, but he cannot forego any part of his own responsibility.

Section III. COORDINATION

15. General

Coordination is the orderly arrangement of group effort, to provide unity of action in the pursuit of a common purpose. To facilitate coordination, the procedure should state the steps to be taken in the execution of the project, their order, and usually the place of performance. There are no degrees of coordination. Either it is fact or it has not been accomplished. In comparison with cooperation, which is the voluntary effort which takes place during action to achieve a common end, coordination is the agreement that takes place during action.

16. Methods of Coordination

In addition to such commonly used methods as informal meetings or face-to-face contact, telephone and radio communications, conferences and correspondence, still another method lies in the very organization itself. That is to say, consideration is given to the very

nature of the line of responsibility between the various coordinating agencies in order to facilitate teamwork. For example, during and following World War II, a major oversea command was organized so that each of the principal staff sections contained similar subsections. The advantage there lay in the fact that items concerning an operation in progress were handled between the two operations subsections while an operation or an action for the future was handled between the planning agencies. As each subsection was organized along similar lines (Army, Navy, Air), this further facilitated coordination. While this method cannot apply in the small units, consideration must be given to it in the formation of task forces and teams composed of small units.

17. Liaison

Coordination between headquarters is aided by placing a representative of one headquarters in the headquarters of the other; for example: coordination of activities between communications zone and army depots. It is aided by placing a liaison officer, from the supporting logistical command, in the ordnance office of the army being supported. The specific mission to be accomplished by this liaison officer is to keep the army ordnance officer and the supporting logistical command constantly informed of all ordnance matters that affect the army. Liaison personnel must be selected, who have a working knowledge of consumption and usage rates of ordnance supplies. It is important that liaison officers rotate periodically between assignments with army and their parent organizations.

CHAPTER 2

ELEMENTS OF ORDNANCE SERVICE

Section I. GENERAL SUPPLY AND MAINTENANCE

18. General

Supply and maintenance are so closely related that a discussion of one automatically involves the other. It must be recognized and thoroughly understood that each is dependent upon the other at each level of command. Maintenance service is performed whenever it is more economical to repair or rebuild an item than to supply a new one, or in emergencies, when time does not permit supply from other sources.

19. Ordnance General Supplies

Ordnance general supplies are referred to as either Class II or Class IV. Ordnance Class II supplies are those items for which procurement is planned to fill requirements authorized by appropriate tables of organization and equipment, table of allowances, or similar Department of the Army authorization. Ordnance Class II supplies include the major items, repair parts, cleaning and preserving materials, etc., which are authorized to be in hands of using units and in stock for ultimate issue to using units based on authorized allowances. Ordnance Class IV supplies are those items which are used or consumed by a Class IV project. The project system provides the basic medium whereby oversea commanders may obtain Class IV supplies required to support logistical and operational plans in their commands, including provisions for the development of overseas bases and for necessary maintenance thereof. The project system is designed to establish Class IV supply requirements for all projects far enough in advance of the time required to permit properly phased procurement and shipment. Basically, all ordnance general supplies which are shipped to a theater of operations are Class II unless specifically shipped for a Class IV project. For further information on Class IV projects, see SR 730-5-1.

20. Ordnance Supply and Maintenance Responsibilities

a. Responsibility for supply operations is assigned to specific levels of command in accordance with the primary mission, character, and mobility of the command involved and the economical distribution of

funds, personnel, and materiel. Consistent with the primary objective of providing effective and economical support of combat operations and training, assets must not be dissipated by distribution to lower levels whose capabilities do not permit efficient and economical management of the support mission. Based on this concept and in order to facilitate integration of the responsibility for supply and maintenance, three categories of supply (organizational, field, and depot) have been established and they parallel the categories of maintenance. For the purpose of providing further flexibility and accuracy, the three categories of supply are subdivided into five echelons which are numbered consecutively from one through five, as are the echelons of maintenance. These numerical terms indicate more accurately the scope, capabilities, and limitations of supply organizations or activities.

b. Levels of command are assigned specific maintenance responsibilities in accordance with the command mission, type of unit, required mobility of operations, and the conduciveness to efficient and economical operations. These responsibilities are assigned to the use of three broad categories of maintenance (organizational, field and depot). These categories are further divided into five numbered echelons of maintenance to provide flexibility and accuracy in describing the capability, scope, and mobility of a maintenance organization or facility; or the personnel, time, tools, equipment, and parts which are available, authorized, or required in connection with the maintenance operation. The principles of a system of maintenance operations are equally applicable to organizations operating in the field and fixed activities performing an installation mission.

21. Ordnance Supply and Maintenance Basic Concepts

The following basic concepts are applicable under normal conditions:

a. Using units will have one source from which to obtain field maintenance of equipment and resupply of organizational allowances. This service is provided by ordnance direct support units.

b. Supply and maintenance are inseparable. The two cannot be separated within the framework of any echelon of ordnance service.

c. All ordnance maintenance units will receive their supplies from a supply depot.

d. A maintenance unit will not be assigned the mission of providing supplies to another maintenance unit.

e. Materiel will be evacuated only as far rearward as necessary to perform required maintenance and return to user or the supply channel.

f. Unserviceable materiel to be evacuated will be considered in the same priority as serviceable supplies. It will be afforded the same

expeditious handling to insure prompt maintenance and return to user or supply channel.

g. Materiel evacuated from using units to maintenance organizations in direct support roles will be repaired and returned to the source from which it was received if repairs are within the capabilities of the maintenance unit. If repairs are beyond its capabilities, materiel will be evacuated and using unit will be issued a like item from exchange stock.

h. Materiel evacuated to maintenance organizations in heavy support roles will not be returned to the source from which it was received but will be repaired for return to supply channels.

i. Materiel evacuated for depot maintenance is considered as theater resources and will not be returned to the source from which it was received but will be repaired or rebuilt and returned to supply channels.

22. Categories and Echelons of Maintenance

The categories of maintenance are frequently misunderstood. Each is definite in its own meaning and if applied properly, is compatible with the other. Definitions of the categories and echelons of maintenance can be found in AR 750-5. However, not implied by the Army regulation is the difference between the two terms.

a. Maintenance categories namely, organizational, field and depot, specify responsibilities for specific maintenance functions. Limitations are imposed on each category of maintenance in that they perform certain echelon of maintenance. Each maintenance category is properly equipped to carry out its assigned maintenance mission. For instance, all ordnance organizations that fall in the field maintenance category are provided essentially the same type of equipment. Based upon the normal situation, direct support maintenance units must be more mobile; therefore, they must have less bulky equipment and a smaller volume of supplies. This imposes the true limitation, as any limitation placed upon it by the echelon system is based on availability of tools, skills, and time.

b. The scope of maintenance at each echelon is determined by the nature of the repair, authorized repair parts, tools, equipment, time available, skill of personnel, and the tactical situation. Maintenance capabilities at each echelon are preplanned by taking full consideration of the capabilities of available units and their deployment. Under certain conditions, the normal scope of maintenance performed at both organizational and field levels may be increased; for example: direct support maintenance organizations may be required to perform many of the 4th echelon maintenance functions normally performed by heavy maintenance support organizations.

Section II. ORDNANCE AMMUNITION SERVICE

23. Class V Supply-Ammunition

Ammunition may be defined as an explosive, a chemical agent, or a combination thereof, which is propelled from a weapon, placed, thrown, or dropped. It includes the container and the initiating and/or detonating elements necessary to function the unit in the desired manner. The term "ordnance ammunition" is used to describe ammunition procured by the Ordnance Corps of the Army. In ordnance ammunition, the filler is primarily an explosive, or an explosive is used in the chain of events, such as in pyrotechnics. The term "chemical ammunition" refers to ammunition, the filler of which is primarily a toxic gas, a smoke, or an incendiary agent. Chemical filled ammunition usually is procured by the Chemical Corps of the Army primarily for use by the army. Certain specific items of army ammunition may be prescribed for use by other armed forces within the National Military Establishment and for use by our allies. In the theater of operations, ordnance ammunition service may store and issue non-toxic types of chemical ammunition, toxic filled shells, and bulk toxics when appropriate service troops of the Chemical Corps are not available or when directed by the theater commander. However, responsibility for the procurement and surveillance of bulk toxic and chemical filled ammunition procured by the Chemical Corps still rests with the Chemical Corps. Captured enemy bulk toxics, air and naval ammunition items, coming under the custody of ordnance ammunition service, are safeguarded for the time being, but are turned over to the appropriate technical service at the earliest opportunity.

24. Ammunition Supply Policies

Ordnance ammunition service in the field is based on a continuous refill system. Tactical units are responsible for maintaining at all times a basic load of ammunition. Replenishment of ammunition expended by units is either concurrent with or in anticipation of an immediate requirement. Withdrawals from ammunition supply points are replenished by shipments from the army ammunition depot. Stock levels to be maintained in ammunition installations of the armies and communication zones are prescribed. Ammunition is moved forward to maintain these levels. Ammunition is controlled by a system of credits to army and by a system of rationing and restrictions on firing within the army. Below the army level the credit system is not used. The allocation of credits to armies on communications zone depots, the announcement of available rates, and the continuous refill system whereby units maintain at all times their basic loads at prescribed levels, and a system of ammunition reports provide the degree of control required by the situation. For details, see FM 9-6.

25. Ammunition Basic Concepts

- a.* The ammunition supply system must be flexible and capable of expansion in order to meet changes in the tactical situation.
- b.* Ammunition must be delivered to locations convenient to the unit ammunition trains of combat units.
- c.* Ammunition supply must be continuous.
- d.* Security of ammunition must be enforced in order that stocks of ammunition will not be placed in jeopardy, either by enemy action, sabotage, explosion, or fire. Safety procedures prescribed in TM 9-1900 must be practiced to eliminate the possibility of injury to personnel or loss of ammunition due to explosion, fire, or chemical contamination. For storage of ammunition in the combat zone, see FM 9-6.

Section III. ORDNANCE SPECIALIZED SUPPORT

26. Ordnance Technical Intelligence Service

Technical intelligence service is provided to collect, collate, and evaluate information pertaining to foreign materiel and supporting installations, and to disseminate the resultant intelligence. It is the means through which the national military establishment obtains knowledge concerning the capabilities and limitations of enemy equipment, his methods of production, his production capabilities, the place of production, and the extent of enemy resources for war. Its importance cannot be overemphasized.

27. Explosive Ordnance Disposal Service

This service is provided to detect, recover, and dispose of explosive ordnance items which may cause injury or loss of life to personnel or destruction of property. In general, explosive ordnance may be interpreted to include explosives of all types, regardless of technical service or departmental responsibilities. Responsibility for explosive ordnance disposal service within the army is assigned to the Ordnance Corps, except for chemical and special engineer items. In performing this responsibility, Ordnance Corps personnel coordinate with the Chemical Corps on all matters concerning chemical, biological, or radiological items and with the Corps of Engineers in the disposal of land mines, demolition charges, and booby traps. These responsibilities are outlined in AR 75-15.

28. Ballistics and Technical Service

This service is provided to measure muzzle velocities of artillery weapons requiring such service; to calibrate all types of artillery weapons for velocity error to insure maximum fire effectiveness; to render technical advice relative to their accuracy and life; and to

recommend replacements and render technical service on ammunition including the determination of its ballistic correctness.

• 29. Technical Assistance

It is the responsibility of every ordnance staff officer to keep his commander informed on all ordnance matters which affect combat efficiency and to provide technical assistance to commanders of subordinate units. In fulfilling this responsibility, he relies, to a large extent, on technical assistance teams selected from fully trained and qualified personnel of the command. The sole purpose for these teams is to improve ordnance service to combat troops. They are the means through which information relative to management is gathered and disseminated. They insure the correct interpretation of procedures; insure uniformity, economy; eliminate bottlenecks; and obtain information which is used for the perfection of procedures. The findings of technical assistance teams are never used as a basis for punitive action against using unit commanders.

CHAPTER 3

ORGANIZATION FOR ORDNANCE SUPPORT

Section I. GENERAL

30. Combat Zone

Ordnance service support in the combat zone is divided into two increments—direct and heavy. Within these increments, supply and maintenance facilities are further subdivided. In a division, direct support service is carried out by the ordnance unit, which is organic to the division. In a field army, ordnance service is broken down into the direct support increment and the heavy support increment. Army direct support operates in much the same way as divisional direct support. The facilities of supply and maintenance are combined in each direct support company. However, heavy support is composed of the field supply companies, artillery and vehicle parks, collecting points operated by recovery and classification companies and heavy maintenance units. The army support troops require a centralized control agency. This function is provided by normal command headquarters, the battalion, the group, under command of the army ordnance officer (fig. 2). Direct support units are formed into direct support battalions; these, in turn, are formed into a direct support group. Heavy support companies are formed into heavy support battalions and heavy support groups. Ammunition companies are formed in ammunition battalions and ammunition groups. Guided missile support units are considered direct and heavy support units and are assigned to direct support battalions. The army ordnance officer commands all ordnance units not assigned or attached to a subordinate headquarters of a different or combined arms or service in accordance with AR 220-109.

31. Communications Zone

Communications zone support troops are organized in much the same manner as the army support troops. Depot maintenance units are organized into depot maintenance battalions and depot supply units are attached to depot supply and maintenance battalions. The ordnance support groups in the communications zone are organized on a functional basis, adhering to the principles of organization wherever possible and deviating only to the point necessary to effect the best overall service. Communications zone support troops not assigned

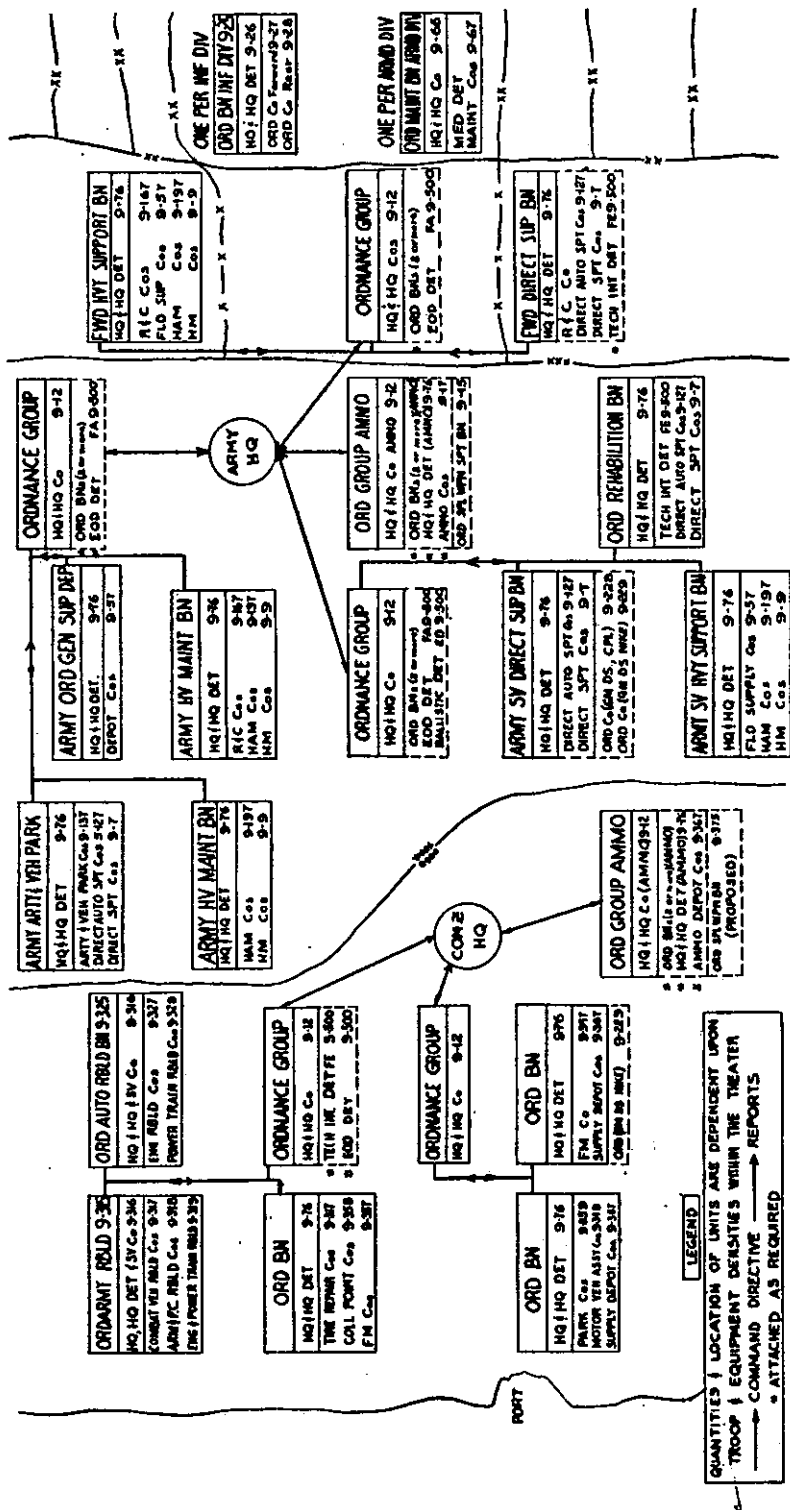


Figure 2. Ordnance command structure.

or attached to subordinate command of a different or combined arms or service are commanded by the communications zone ordnance officer in accordance with AR 220-109. Those units engaged in Fifth Echelon supply and maintenance activities should normally remain under the command of the communications zone ordnance officer and not be assigned or attached to a subordinate command of different or combined branches of service.

32. Ordnance Command Headquarters

Ordnance units may be combined into groups or battalions on the basis of their location within a given area, on the basis of their functions or on a combination of both. Groupings other than functional, however, should be the exception rather than the rule. For example: Ammunition companies should be formed into ammunition battalions and ammunition battalions formed into ammunition groups. In the same manner, direct support maintenance units, heavy support maintenance units, and general supply units should be grouped together on a functional basis. The organization and functions of a headquarters unit will depend upon assignment, the type or types of assigned or attached subordinate units, the operating missions of these subordinate units, and the relative permanency of their composition. Certain general functions will be performed by the headquarters in all situations. These include command, administration, and operations.

a. Command. The organization commander is responsible for ordnance service to all units supported by his command. He commands all assigned ordnance troops and is responsible for the operation and activities of those troops as well as the headquarters activities. In addition to his responsibilities as organization commander, he must share, along with higher echelon ordnance staff officers, full responsibility for providing an adequate ordnance service. The ordnance organization commander is a deputy in every sense of the word to the ordnance staff officer of the command under which he is operating.

b. Administration. Administration for the organization is directed by the adjutant. It includes the operation of mail and records, message center, personnel activities, the publication of orders, bulletins, memoranda, and directives. It prepares routine correspondence and maintains files and libraries. Personnel activities of the ordnance group do not require the maintenance of detailed records concerning the personnel of battalions and companies attached to the group; these are functions of assigned battalion and company personnel sections. Group functions are limited to establishing personnel policies, coordinating administration, checking reports submitted by battalions, and the consolidation of these reports for submission to higher headquarters. This organization of group and battalion headquarters does not contemplate the use as administrative units for supply breakdown,

centralized personnel administration, or any other functions normally required of an organization of fixed composition.

c. Operations. In general, operations include all the staff functions of S2, S3, and S4, such as—

- (1) Supervision of the training and administration of all attached units.
- (2) Determination of locations of command posts, battalions, and independent companies and attachment of companies to battalions in accordance with changing requirements and conditions.
- (3) Publication of a daily bulletin giving the latest location of ordnance units and installations under control of the organization. Maintenance of a daily journal for historical purposes which will also enable any officer of the organization to familiarize himself with the activities of the entire staff.
- (4) Maintenance of an up-to-date situation map which shows the tactical situation as well as the locations of all ordnance units and installations.
- (5) Supervision of technical assistance service for the organization.
- (6) Balancing of work load between subordinate units.
- (7) Dissemination of information to subordinate units.
- (8) Maintenance of liaison with units being supported.
- (9) Consolidation, as required, of supply and maintenance reports from subordinate units for transmission to the ordnance staff officer of the next higher command.
- (10) Direction of lateral supply between subordinate units, in other than ammunition units.
- (11) Supervision of subordinate units in determining supply requirements in view of support role assigned, in other than ammunition units.
- (12) Assisting subordinate units in obtaining items in short supply.
- (13) Preparation and execution of plans for the security of the command as a whole.
- (14) Coordination and exercise of general supervision over the technical operations of subordinate units.
- (15) Determination of the specific mission of subordinate units.
- (16) Approval or preparation of plans for the movement of the subordinate units or unit headquarters.
- (17) Performance of liaison between the subordinate units and higher headquarters.
- (18) Keeping the commander informed on all matters concerning operations.

Section II. MAINTENANCE AND SUPPLY

33. Territorial Organization

Based on the concepts enumerated in paragraph 21, it is evident that some logical sequence must be followed to provide the supply support required of ordnance service. Ordnance support troops fall within one of three main territorial boundaries—Division, Army and ComZ. The position an ordnance support unit occupies within these territorial boundaries has much to do with establishing the mission and capability of the unit. One of the greatest limitations imposed on the mission and capability of any ordnance support unit is mobility. The most forward units require the greatest degree of mobility and, therefore, the capability is limited to the extent necessary to provide this mobility. Not lost in this territorial organization is the concept that maintenance supports supply at all field and depot maintenance levels. Therefore, a repair capability which will support supply is provided at even the most forward point by the maintenance and supply units organic to divisions. Only such materiel which cannot be promptly repaired and returned to the user is evacuated from the division areas to support organizations. Support organizations located within the army area make the utmost use of available tools and skills to repair and return to supply channels the greatest amount of unserviceable equipment which has been evacuated from division areas. Materiel is evacuated to the ComZ only after all facilities to reclaim the materiel for the replenishment of supply at army level have been fully utilized. ComZ support troops provide the reserve of supply and supply potential that is required to insure an uninterrupted flow of supplies into the combat zone. To carry out this mission, they have available to them all theater resources which include—Materiel received from the ZI; materiel received from local economy; materiel manufactured by ordnance depot maintenance facilities; and unserviceable materiel evacuated to the ComZ for rebuild.

34. Distribution and Evacuation

It is important that the means of distributing vehicles, artillery, and other general supplies be provided in ordnance supply and maintenance units or that such means be provided by units of the Transportation Corps. The means must also be provided for evacuating unserviceable vehicles, artillery, and other general supplies to effect the repairs required to make them serviceable. Provisions are made in the field type units for distribution and evacuation functions to be performed by organic sections at such units. In the communications zone, delivery of all supplies is performed by the Transportation Corps.

35. Supply and Maintenance Support System

Figure 3, Flow of serviceable ordnance general supplies, and figure 4, Flow of unserviceable ordnance general supplies, graphically depict the organization for supply separated into three main territorial increments. All supplies follow the most direct channel possible from the time they enter the supply system until they are in the hands of the using unit. This concept is made workable by furnishing all supplies through a series of depots to direct support units which have the responsibility of furnishing all supplies to the user. In support of the supply system at all echelons, ordnance maintenance organizations are provided to repair and replace in service as much unserviceable equipment as possible. This is effected at direct support units by repairing the unserviceable materiel and returning it directly to the user or the source from which it was received. When, on the other hand, this materiel has been evacuated as far back as the army heavy support units, repair time involved obviates the possibility of direct return to the user. Materiel evacuated to heavy support units is repaired and either returned to supply channels (a field depot or an artillery and vehicle park) or used to replenish the exchange stock.

a. Direct Support.

- (1) Direct support, divisional units—Once the using unit has been furnished all its equipment and basic load of repair parts, it need contact its direct support element only for replenishment of nonrecoverable repair parts and replacement of recoverable components and major items, or for maintenance beyond its capabilities. All equipment in the hands of the division is supported by the divisional direct support organization until such time as the volume is beyond its capabilities. When this happens, army direct support must be called on to reinforce divisional direct support.
- (2) Army direct support units operate in exactly the same way as the divisional direct support unit. The capability of army direct support, however, provides added elements of time, equipment and personnel required for the maintenance and return to the user of greater quantities of repaired serviceable equipment. Ordnance materiel does not go beyond the army direct support units until such time as it cannot be made serviceable within a reasonable length of time and returned to the user for combat service. When it is evident that materiel from using units cannot be repaired and returned to service in a reasonable length of time, it is evacuated by the direct support unit directly to heavy support. A serviceable item is then issued to the using unit from the exchange stock of a maintenance company.

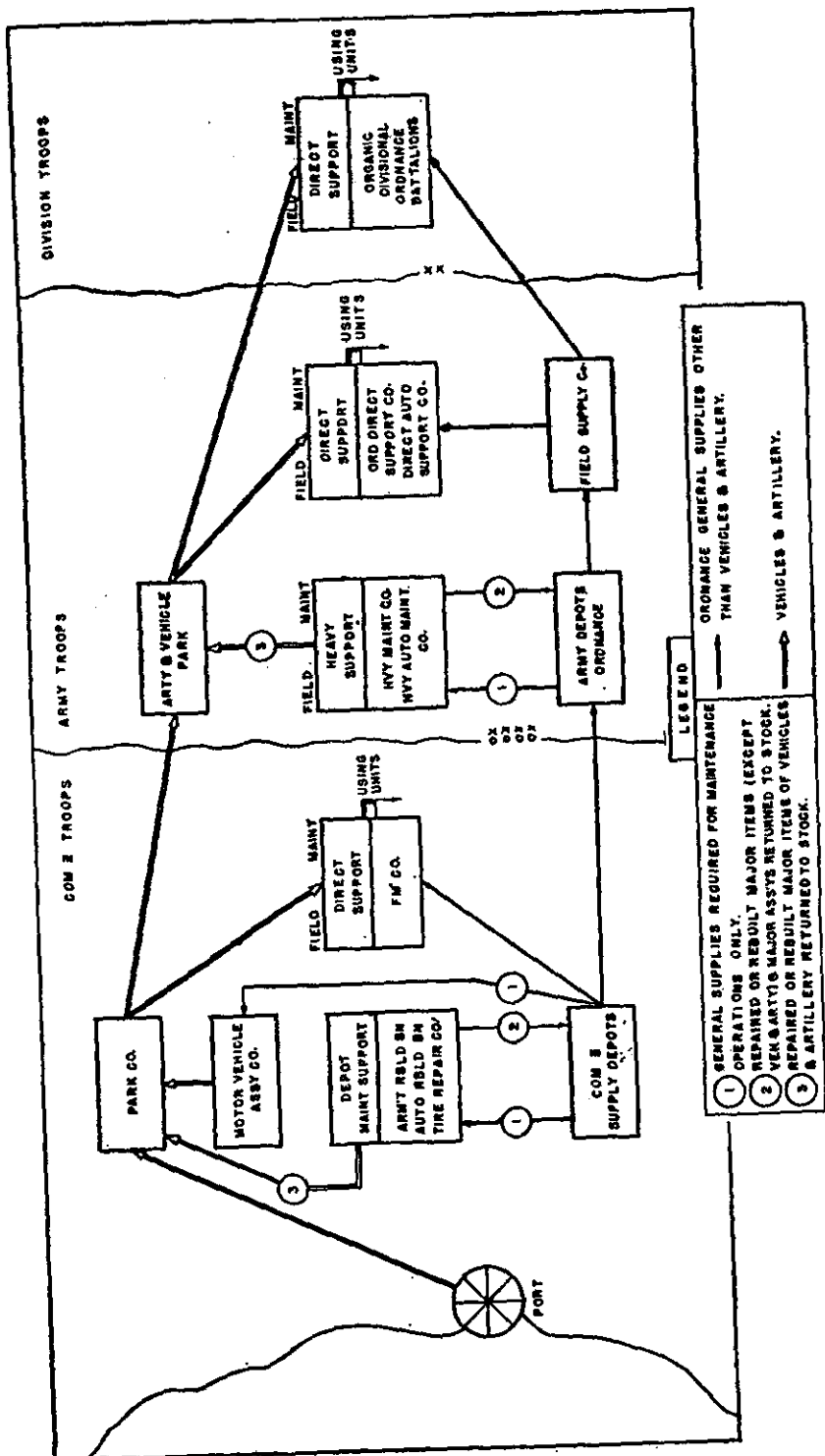


Figure 3. Flow of serviceable ordnance general supplies.

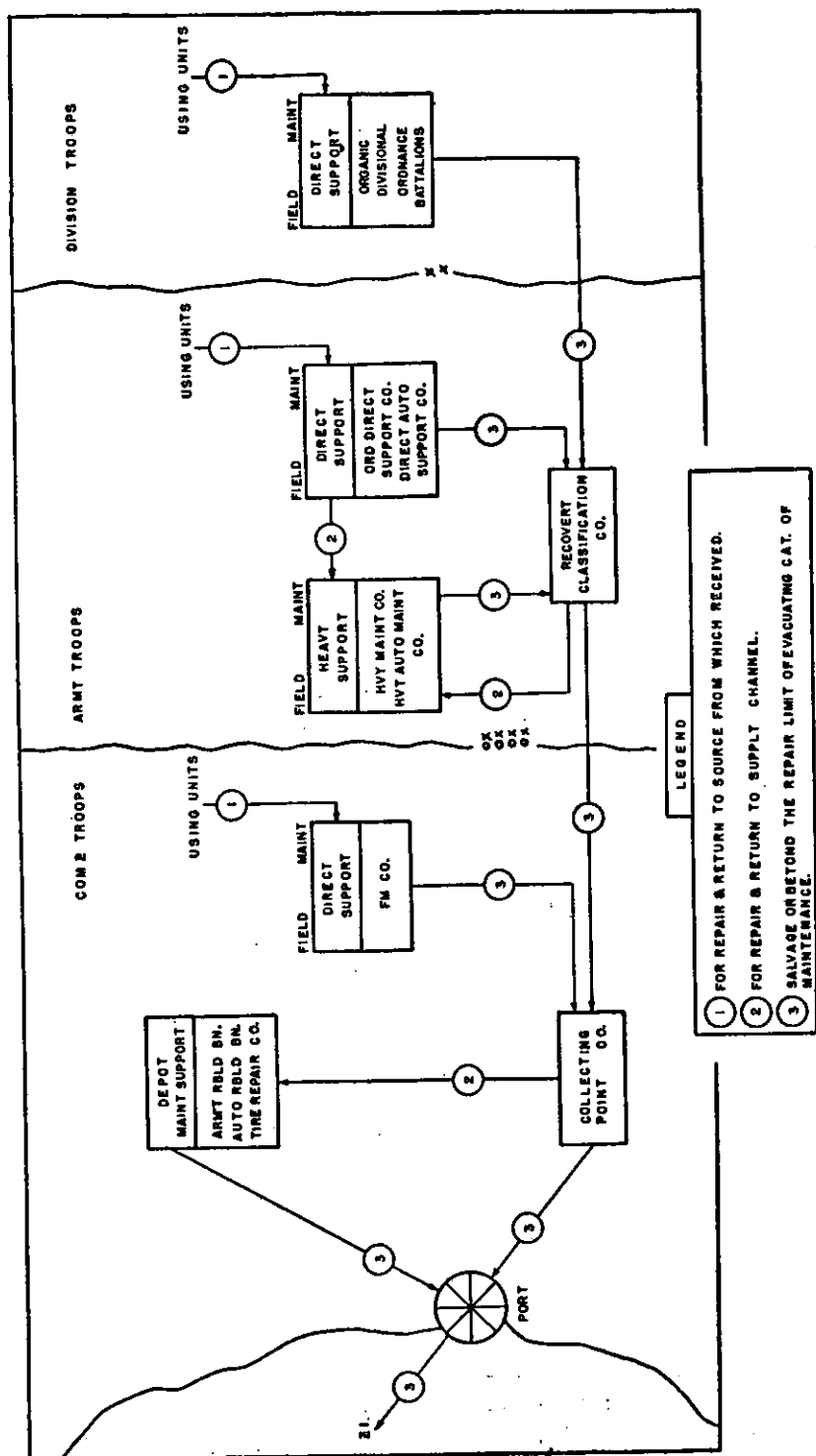


Figure 4. Flow of unserviceable ordnance general supplies.

b. Heavy Support. Heavy maintenance, as well as supply, is an integral part of heavy support. The equipment evacuated from direct support units is received either by the recovery and classification company or is evacuated directly to a heavy maintenance company. In heavy support, all available equipment and personnel are utilized to return the maximum amounts of repaired equipment to serviceable supply channels.

c. Depot Support. Depot maintenance is also an integral part of depot support. It operates in exactly the same manner as heavy maintenance. Utilization of more complex equipment and highly skilled personnel and production line methods make it capable of performing more involved and time consuming operations. It can return a considerably higher percentage of equipment to the supply channel than can heavy maintenance.

Section III. AMMUNITION SUPPLY

36. Ammunition Support

Ordnance ammunition service in the field is organized and managed so as to place the required quantities, and the desired types, of army ammunition at locations convenient to the unit ammunition trains of combat units, to afford maximum support of operational plans, and to accomplish this object with a minimum demand on the national economy for raw materials, industrial capacity, transportation facilities, and manpower.

37. Ammunition Terms

a. Allocation. An allocation, allocation of credit, or allocation of ammunition establishes or assigns "ammunition credits." It is the act of obligating, earmarking, or reserving a definite quantity of ammunition at a specified ammunition supply installation for a designated organization. (These terms are often used in the field to refer to the ammunition which is allocated, and when so used are synonymous with the term ammunition credit.) Allocations normally are not used below army level.

b. Ammunition Credit. A definite quantity of ammunition reserved for, and placed at the disposal of, the commander of a designated organization at a specified ammunition supply installation. An ammunition credit is not established unless actual ammunition is on hand at the specified ammunition supply installation. An ammunition credit is tangible; it is existing ammunition which has been reserved or earmarked.

c. Ammunition Day of Supply. The ammunition day of supply is the estimated quantity of ammunition required per day to sustain operations in an active theater. It is expressed in terms of rounds per

weapon per day for ammunition items fired by weapons, and in terms of other units of measure for bulk allotment (antitank mines, hand grenades, demolition explosives, etc.) items. It is used by the Department of the Army and by theater commanders in establishing theater stock levels. The basis is applied to weapons authorized to be in the hands of all troops in the theater, beginning with their arrival in the theater. The term "day of supply" may be used to express either the requirement or supply level by theater, by base, or by tactical command (army group, army, etc.). The term is applicable to a theater army command of not less than 150,000. It may, however, require evaluation, augmentation, or reduction of certain types if applied to a smaller force or to a greatly increased one. When the term "ammunition day of supply" is used to express either quantities on hand or ammunition available to support tactical operations, the term must be qualified in terms of day of supply for each type of weapon. For example, "10 days' supply for the 81-mm mortar; 6 days' supply for the 105 howitzer; 15 days' supply for all other weapons." Except as used by the army commander in estimating ammunition requirements for such units, the term "day of supply" has no application to tactical units below the army level. A day of supply usually will vary between theaters to conform with experience, type of operation, or plan. The Department of the Army establishes two ground ammunition days of supply: the one is based on recommendations of the commander in a specific area with a certain assigned mission and is published in Logistics Policies and Priorities (formerly Supply Supplement to the Department of the Army Troop Program); the other is based on experience involving large scale combat operations. It is used for overall mobilization planning and is published in SB 38-26. In a new theater the Department of the Army ground ammunition day of supply as published in the SB 38-26 will be used as a basis for initial stockage until such time as experience provides a firm basis of change. Theater commanders make continuous studies of ammunition consumption and recommend necessary changes in the theater day of supply, bearing in mind that increases in the day of supply may result in increase of production rates, and may require additional manufacturing facilities. Normally, a time lag of 9 to 12 months occurs between recommendations for changes and actual changes in the theater. Decreases in the requirement also must be reported promptly to permit reduction in production programs and release of manpower and facilities to meet other requirements.

d. Available Supply Rate. The available supply rate is the rate of consumption of ammunition that can be sustained with available supplies, announced by each commander and applicable within his command. For ammunition items fired from weapons, this rate is expressed in rounds per weapon per day and in terms of other units of

measure for bulk allotment items. It is flexible to conform to changing operational plans and commitments and changing tactical conditions. It is used as a control within a unit on the amount of ammunition that may be expended by that unit. At army group and army level, the term is also used as a forecast of ammunition that may be expended by that unit. At army group and army level, the term is also used as a forecast of ammunition availability. The available supply rate is computed on and applied to tactical weapons only, i. e., the weapons in divisions and the crew served weapons in nondivisional tactical units. Weapons in combat service support units, service support units, and the supply channel are excluded unless unusual circumstances necessitate their employment in a combat role.

e. Basic Load. The basic load is a specific amount of ammunition prescribed to be in the possession of each type organization. It is published as a guide in FM 101-10. During mobilization and in time of war, the basic load guide may be published in another form by the Department of the Army. Oversea commanders, at their discretion, may authorize an appropriate basic load for units within their command. In addition, the basic load is subject to variations by army commanders when the transportation provided in TOE is modified by reduction or augmentation tables or by operational projects. Normally, the basic load of ammunition may be considered to include all ammunition authorized to be on hand within the organization. It includes ammunition carried by the individual soldier, ammunition stowed in self-propelled weapons, ammunition carried in prime movers or other vehicles organic to the unit, ammunition stowed at gun positions, and ammunition held at unit storage points. The basic load is expressed in terms of rounds for ammunition items fired by weapons and in other units of measure for bulk allotment and other items. For listing of bulk allotment and other items, see SB 38-26 and Logistics Policies and Priorities. In general, the percentages by kind listed in SB 38-26 as the ammunition day of supply will be followed. This percentage may be amended by the commander, however, so far as availability will permit.

f. Required Supply Rate. The required supply rate is the amount of ammunition expressed in terms of rounds per weapon per day for ammunition items fired by weapons, and in terms of other units of measure per day for bulk allotment and other items estimated to be required to sustain operations of any designated force without restriction for a specified period. Tactical commanders use this rate to state their requirements for ammunition to support planned tactical operations at specified intervals. The required supply rate is submitted through command channels. It is consolidated at each echelon and is considered by each commander in determining the available supply rate within his command. The required supply rate is computed on

and applied to tactical weapons only (weapons in divisions, crew served weapons, and nondivisional tactical units; weapons in service units in combat support and service support roles are excluded). The term may be applied to tactical units (army group, army, corps, divisions, etc.), and may vary between commands and within like units of a tactical command.

38. Summary of Responsibilities

a. Department of the Army. The Department of the Army is responsible for—

- (1) Determination and publication of basic load guides.
- (2) Determination and publication of ammunition day of supply.
- (3) Prescribing levels of supply for each theater of operations.
- (4) Designating the responsible zone of interior supply agency to supply the theater.
- (5) Maintaining a procurement rate of ammunition consistent with the requirements of the zone of interior and all theaters of operation.
- (6) Insuring the availability of a weapons list and troop list to show the rate of deployment to the theater.

b. Theater Commander. The theater commander is responsible to the Joint Chiefs of Staff for all military plans and operations taking place within his theater.

c. Theater Army Commander. The theater army commander is responsible to the theater commander for all operations incident to the supply of army ammunition within the theater of operations which include—

- (1) Recommendation of the theater army ammunition day of supply.
- (2) Procurement of army ammunition for the theater.
- (3) Publication of a standing operating procedure on army ammunition supply within the theater to include stock control procedures.
- (4) Determination and announcement of the available theater army supply rate.
- (5) Distribution of army ammunition within the theater by prescribing levels of supply to be held in the combat and communications zone.
- (6) Enforcement of supply economy.

d. Communications Zone Commander. As directed by the theater army commander, the communications zone commander is responsible for the actual operation of the army ammunition supply system in a manner that will provide the logistical support required by the armies. By means of the central stock control agency he controls the flow of

ammunition from the zone of interior to the combat zone. He is responsible for—

- (1) Maintenance of the theater army ammunition supply level prescribed for the theater.
- (2) Making recommendations for changes in the theater army supply level and theater army day of supply when the need arises.
- (3) Distribution of ammunition within the communications zone.
- (4) Delivery of ammunition to combat zone.
- (5) Compliance with directives of higher headquarters in the allocation of army ammunition.
- (6) Enforcement of ammunition supply economy.

e. Army Group Commander. The army group commander is responsible for—

- (1) Evaluation of required supply rates submitted by the armies and submission of consolidated required supply rate to the theater army commander.
- (2) Announcement of an available supply rate to each army.
- (3) Providing the communications zone commander with information concerning the desired allocation of ammunition.
- (4) Enforcement of ammunition supply economy.
- (5) Establishment of priorities.

f. Army Commander. The army commander is responsible for—

- (1) Evaluation of the required supply rates submitted by the corps and other tactical organizations assigned or attached to the army, and submission of a consolidated required supply rate to the army group commander.
- (2) Announcement of available supply rates to corps and to other tactical organizations assigned or attached to the army.
- (3) Submission of ammunition status reports to the central stock control agency, and to the logistical command or other agency providing logistical support.
- (4) Recommendation of basic load to suit his mission.
- (5) Maintenance of adequate levels of stock in army ammunition installations, and distribution of ammunition within the army area.
- (6) Calling forward ammunition credits from the communications zone to replenish withdrawals from army ammunition supply installations.
- (7) Enforcement of supply economy.

g. Corps, Division, and Other Tactical Unit Commanders. Corps, division, and other tactical unit commanders are responsible for—

- (1) Evaluation of the required supply rates submitted by subordinate tactical commands, and submission of a consolidated

- required supply rate to the next higher tactical commander.
- (2) Announcement of an available supply rate to subordinate tactical commanders.
 - (3) Maintenance of basic loads at prescribed levels.
 - (4) Enforcement of ammunition supply economy.

Section IV. ORDNANCE TECHNICAL INTELLIGENCE

39. Mission

The mission of the technical intelligence system is to collect, collate, and evaluate information pertaining to foreign materiel and supporting installations, and to disseminate the resultant intelligence. The importance of technical intelligence to the success of the military effort cannot be overemphasized. The production of technical intelligence is one means through which the National Military Establishment obtains knowledge concerning the capabilities and limitations of enemy equipment, his methods of production, his production capabilities, the place of production, and the extent of enemy resources for war. From this intelligence, technical and tactical countermeasures are developed and enemy resources of strategic importance are neutralized. Technical intelligence covering identification, capabilities, use, and interchangeability of enemy and United States or allied items is tactically important to troops in combat.

40. Operations

Ordnance technical intelligence service is performed by ordnance technical intelligence officers or ordnance technical intelligence detachments, under operational control of the ordnance officer of major field commands. Technical intelligence activities come under the staff supervision of G2. The success of the technical intelligence mission depends, to a large extent, upon the repetitive manner in which information is collected, evaluated, and disseminated. Intelligence detachments should be afforded maximum assistance in expediting the collection and dissemination of information. The responsible ordnance staff officer must make provisions for providing promptly necessary means of transportation or other assistance in evacuating items of an intelligence nature. Delays attributable to administrative red tape or lack of priority must not occur. For further information on the operations of technical intelligence service, see FM 30-16 and figure 5.

41. Cooperation

Cooperation with and by the combat units is one of the most important elements to the success of the technical intelligence mission. It must be impressed upon every individual that success or failure of our armies, to a great extent, is dependent upon timely collection

and dissemination of both tactical and strategic intelligence information. The success of the intelligence systems involves more than cooperation between unit commands and general and special staff officers. To be completely successful, cooperation of the individual soldier must be obtained. In the course of World War II, much information of potential intelligence value (technical, tactical, or strategic) was denied to the interested agencies because friendly troops were not impressed with the importance of avoiding the defacing or removal of identification plates and other pertinent data from enemy equipment. This lack of cooperation was due, mainly, to the failure of unit commanders to impress properly upon the individual the importance of intelligence. Individuals must be trained to recognize and report information of possible intelligence value.

42. Captured Enemy Materiel

The extent to which this materiel is used normally is governed by theater directive and/or the tactical and logistical situations. Enemy materiel captured or found in the zone of action must be safeguarded until proper disposition is made or until turned over to a relieving unit. Commanders of units capturing enemy materiel should make an immediate report to the G2 of the next higher headquarters, setting forth all pertinent details. Technical intelligence personnel normally will direct or effect means of evacuation or destruction. If immediate use or destruction is not necessary, materiel will be left in position under guard until it can be turned over to the interested technical service. Through the proper handling of captured enemy materiel, four major objectives are achieved—

- a.* Effective counterweapons and countertactics are developed promptly.
- b.* New ideas are exploited promptly for our own benefits.
- c.* Early deductions are made as to the state of enemy resources for war.
- d.* Enemy supplies which are usable are used to augment our own supplies.

43. Shipment of Captured Materiel to Zone of the Interior

The Chief of Ordnance provides the necessary installations and facilities in the zone of the interior for the receipt, processing, and distribution of enemy materiel received from theaters of operation. As directed by the Chief of Staff, captured materiel is distributed to meet the needs of training establishment after intelligence requirements have been met. All items of equipment shipped from the theater of operations must be preserved, packaged, and marked properly to eliminate any possible damage while in transit. When necessary, equipment must be safeguarded and, in the case of extremely

to our forces is captured in position. This information is passed to the S2 by the combat troops who captured it. The S2 immediately telephones G2 and tags the weapon. G2 notifies the Ordnance Technical Intelligence Special Staff Officer or the Ordnance Technical Intelligence Control Detachment and relays the information to the technical intelligence coordinator. An Ordnance Technical Intelligence Detachment proceeds promptly to the captured weapon, makes a preliminary examination, when necessary immediately evacuates it, with samples of ammunition, if available, to the designated ordnance installation for captured materiel, and writes a preliminary report. At the ordnance installation, a final field examination is made and a final field report written. The weapon then is evacuated to a shipping depot where it is crated and shipped to the zone of interior for further exploitation.

45. Reports

Reports on information which may yield intelligence are of two kinds—preliminary reports and final reports. For the flow of these reports, see figure 6.

46. Responsibilities of Ordnance Technical Intelligence Detachments

Operating in close collaboration with G2's, S2's, other technical service intelligence detachments, and combat troops at all levels, Ordnance Technical Intelligence Detachments perform the following functions as directed in connection with captured enemy materiel:

- a. Identification.
- b. Selecting, cannibalizing, and assembling.
- c. Evacuating or assisting in the evacuation.
- d. Examining and testing, making preliminary and final field reports on an item's use and effectiveness.
- e. Making up questionnaires to assist in the interrogation of prisoners of war possessing technical intelligence information.
- f. Instructing combat troops in the recognition, use, maintenance, countermeasures, and destruction of captured enemy equipment.

47. Ordnance Technical Intelligence Units

Ordnance Technical Intelligence Detachments and Ordnance Technical Intelligence Control Detachments are provided for in TOE 9-510.

a. *Technical Intelligence Detachment.* Technical intelligence detachments are assigned on the basis of one per corps and army. They locate, collect, examine, and report upon enemy materiel which is peculiar to ordnance. Information which may yield intelligence is reported to the proper agencies for evaluation and interpretation.

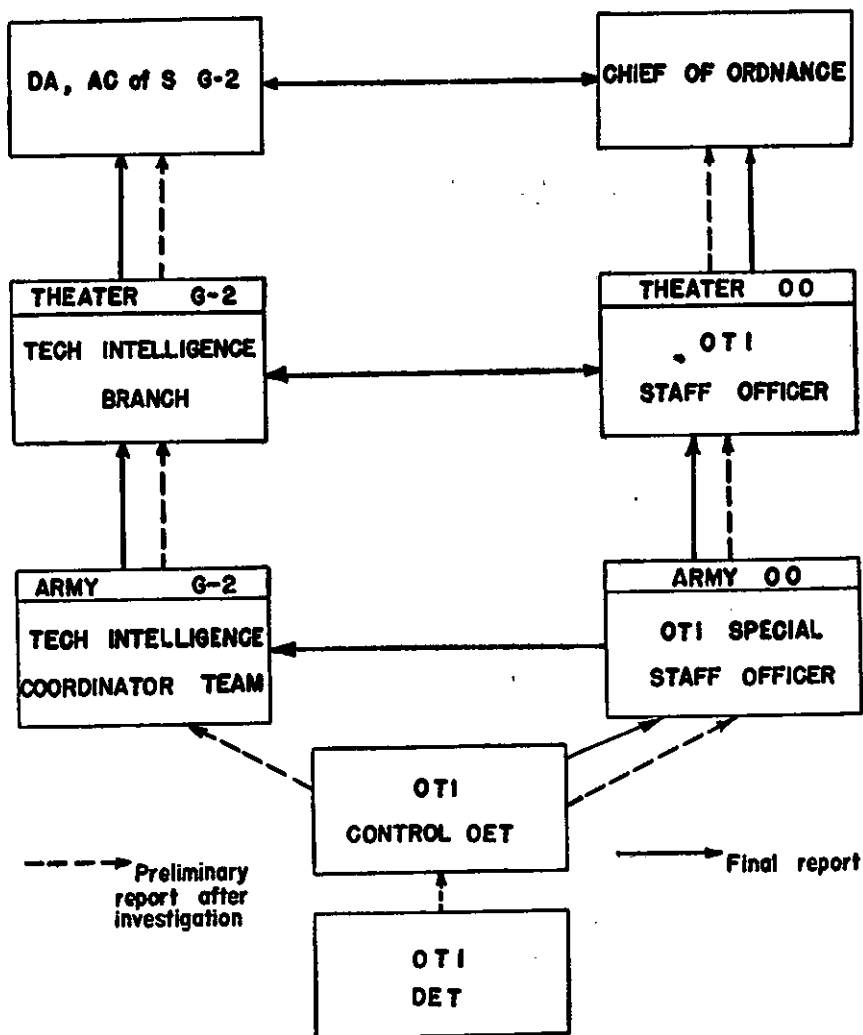


Figure 6. Flow of ordnance technical intelligence reports.

Technical intelligence detachments are a source of information on matters concerning the capabilities, limitations, or other technical aspects of enemy materiel peculiar to ordnance.

b. Technical Intelligence Control Detachment. These detachments normally are assigned on the basis of one per army and operate as control centers in coordinating the activities of the detachments, and in the receipt of technical intelligence reports and the evaluation and dissemination of intelligence derived therefrom. The commanding officer of the control detachment may serve as technical intelligence officer on the staff of a major command.

Section V. EXPLOSIVE ORDNANCE DISPOSAL

48. Mission

Explosive Ordnance Disposal Service has the mission of detection, recovery, evaluation, and disposition of explosive ordnance which has been launched, placed, armed, or otherwise had its explosive train initiated, but which has not yet exploded.

49. The Problem of Disposal

Explosive ordnance items which have failed to detonate on impact pose a serious threat to facilities, communications, and the morale of personnel. Experience indicates that from 5 to 10 percent of enemy bombs may fail to explode upon impact, either by intent or as a result of fuze failure. More than half of this amount can be expected to detonate at some later time. It is these items which require that prompt, effective measures be taken to prevent their detonation. Conventional ground launched explosive ordnance items present the same problem but, generally, because of the smaller explosive charge, the degree of danger is less. Atomic munitions and guided missiles each have their own peculiarities, but they too represent a major hazard. Regardless of how the explosive ordnance item is launched, the problem of disposal is real and requires special consideration. For detailed information on explosive ordnance reconnaissance and disposal, see FM 9-40.

50. Explosive Ordnance

Explosive ordnance may be briefly defined as an item containing an explosive together with an explosive train designed to detonate upon the completion of a predetermined series of events, such as impact, time influence and disturbance. Land explosive ordnance includes bombs, artillery shells, mortar shells, rocket projectiles, guided missiles, nuclear explosives, land mines, demolition charges, booby traps, and all similar related items or components. Underwater explosive ordnance includes all items designed to function under water, such as mines, torpedoes, and depth charges.

51. Responsibilities for Disposal

The following explosive ordnance disposal responsibilities have been assigned by the Department of Defense (included in AR 755-145) for the zone of interior and are applicable in theaters of operations:

- a. Department of the Navy.* Underwater, coastal areas to include the high water mark, and all Department of Navy installations.
- b. Department of the Air Force.* All Air Force installations.
- c. Department of the Army.* All other areas not specifically assigned by (1) and (2) above. Within the Department of the Army,

explosive ordnance disposal responsibilities are further assigned by AR 75-15 to the Ordnance Corps except—

- (1) Chemical components, which are the responsibility of the Chemical Corps after removal of explosive charge by Ordnance personnel.
- (2) Land mines and booby traps, which are the responsibility of the Corps of Engineers.

52. Explosive Ordnance Disposal Units

Explosive Ordnance Disposal Detachments and Explosive Ordnance Disposal Control Detachments are provided for, with basis for assignment in TOE 9-510.

a. Explosive Ordnance Disposal Detachment. Detachments normally are assigned one per army and corps. This unit is charged with the disposal of latent explosive ordnance, such as bombs, shells, rockets, guided missiles, special weapons, and hazardous ammunition in storage when specified by the Chief of Ordnance. The detachment may be augmented with additional personnel and heavy equipment when its capabilities must be increased by an augmentation unit.

b. Explosive Ordnance Disposal Control Detachment. Detachments normally are assigned one per army. Control detachments are provided to operate control centers for the receipt of explosive ordnance incident reports, the scheduling of disposal operations, and the receipt of completion reports and information which may yield intelligence of interest. The commanding officer of the control detachment may serve as the explosive ordnance disposal officer on the ordnance staff of the major command.

Section VI. BALLISTICS AND CALIBRATION

53. Mission

Ballistic and technical service detachments are charged with the following mission:

- a.* Measuring muzzle velocities of all artillery weapons requiring such service.
- b.* Calibration of all types of artillery weapons for maximum effectiveness.
- c.* Rendering technical advice relative to the accuracy life of gun and howitzer tubes and recommending their replacement when needed.
- d.* Rendering technical advice on ammunition lots and determination of their ballistic correctness.

54. Calibration Service

a. Effective employment of artillery in the field depends, to a large extent, on a knowledge of the ballistic characteristics of the weapons. The difference in velocity and, consequently, in range, between a gun

as issued and the same gun after use, must be known if fire is to be accurate. Firing tables give velocities and ranges for a new gun using standard ammunition under standard conditions. Where wear in the gun, nonstandard ammunition, or a combination of these factors exist, variations in velocities and ranges from those in the firing table must be compensated for if the center of impact is to be brought on the target. Failure to correct for velocity differences in guns may result in an unsuccessful artillery mission, with possible casualties to friendly troops that might not have occurred if adjustment of fire had been accurate and rapid. When fire is inaccurate, excessive ammunition is used and resultant wear of gun tubes will hasten the necessity for their replacement. These consequences of velocity variation are avoidable.

b. Grading and segregation of ammunition lots is the first and most important measure in the correction of velocity variations. Differences between guns, save for the single case of unobserved fire, are subject to control; but when ammunition lots are mixed, the difference between lots makes for contradictions on every salvo. Hence, ammunition lot integrity is the basis for application of any calibration data. Guns frequently are blamed for inaccuracies actually caused by mixing of ammunition lots, and even by mixing of shells of different zone weights (without correction) in ready stacks at the guns. This neglect to grade and segregate ammunition sometimes results in alleged dispersion errors attributed to worn or oval bores, which causes tubes to be wrongly condemned at a very early life. Strict observance of ammunition lots is indispensable to controlled artillery fire. No amount of calibration will do much toward securing accuracy if grading and segregation of ammunition is neglected. Once proper sorting of ammunition is achieved, calibration will enable accurate and rapid control of fire to be maintained.

c. After proper grading and segregation of ammunition lots, the next most important factor in the correction of velocity variations is calibration of the weapon. Calibration is of two kinds—absolute calibration and relative calibration.

- (1) Absolute calibration determines the velocity of a gun relative to the velocity of a standard gun fired with uniform standard ammunition under standard conditions. This form of calibration demands the retention of a secondary lot of ammunition of known velocity for each caliber. The facilities for absolute calibration are not normally available in the field and are performed on new or reissued weapons. A used 90-mm gun will, for example, be calibrated and found to have a velocity of 2,625 feet per second. This gun will then be reissued as a 2,625-foot per second gun, and not as a standard 2,700-foot per second gun.

- (2) Relative calibration determines the difference in velocity between the weapons of a battery of a battalion. All guns shoot the same lot and weight zone of ammunition for velocity and are graded in relation to each other. This procedure contributes greatly to the accuracy of massed fire by permitting accurate ascertainment of elevation differences necessary to bring the centers of impact of the several weapons of a battery of a battalion to the same point.
- (3) It is important to know types of weapons that should be calibrated, and the kind of calibration that should be used for specific ones:
 - (a) Repeated calibration of low velocity guns or howitzers is not vital because the weapons do not lose velocity rapidly even with relatively large numbers of rounds fired. For instance, the 105-mm howitzer loses only 2 feet per second velocity per 1,000 rounds of mixed zone ammunition fired. Since errors accumulate by the square law, the elimination of the calibration error would have an entirely negligible effect on the total error which includes meteorological error, map range errors, "error-of-the-day," and other factors. With low velocity weapons, correction from a wear curve, even though approximate, is sufficient.
 - (b) High velocity weapons wear rapidly, consequently both antiaircraft and field artillery can use calibration data efficiently. An 8-inch gun will lose about 33 feet per second velocity for every 100 rounds fired. Such a loss can cause a significant change in range and have an important effect on the hitting of point targets. The high velocity weapons should be calibrated at least relative to each other within the unit, and preferably should have absolute calibration.
 - (c) Calibration of direct fire weapons is not essential, since a moderate drop in velocity results in only a slight drop at the target instead of a large change of range like that which may occur in the use of indirect fire. While velocity loss may be important with respect to armor penetration, information on velocity drop of direct fire weapons can be readily and quite reliably obtained from velocity-drop curves or tables.
- (4) The usefulness of a velocity measure is dependent upon the constancy of velocity of the weapon, the uniformity of ammunition from lot to lot, the ratio of the velocity error to other existing errors, and the efficiency with which the velocity information will be used.
- (5) In order to secure the maximum efficiency in combat fire, it is very desirable to have previously determined the absolute

or relative calibration of the weapons being employed within the respective artillery organization. It should be noted, however, that calibration is merely a refinement in the improvement of artillery fire, except possibly in weapons like the 8-inch gun; and is apt to be far less important than differences between ammunition lots.

55. Ballistic and Technical Service Detachments

Ballistic service is performed by a Ballistic and Technical Service Detachment provided for in TOE 9-510. This detachment is assigned to either the combat zone or communications zone as required to render ballistic service and technical advice.

Section VII. TECHNICAL ASSISTANCE SERVICE

56. Responsibility

Commanders of major commands having responsibility for ordnance field support will be responsible for the establishment of an adequate technical assistance service in ordnance support units and/or fixed ordnance field maintenance installations under their control.

57. Technical Assistance Service

Technical assistance service establishes a cooperative and efficient relationship between supporting ordnance units and/or installations and using units. It is necessary to the establishment of effective supervision and accomplishment of organizational maintenance and supply. Technical assistance service insures the correct interpretation of procedures, insures uniformity in their application, and obtains information which is used to improve organizational maintenance and supply and ordnance field support to using units. The objective of ordnance technical assistance service is to emphasize more effective supply economy and conservation of ordnance materiel. Technical assistance service is extended to the field through the following means:

a. Liaison parties from supporting ordnance units and/or installations.

b. Work parties from supporting ordnance units and/or installations.

58. Organization and Functions

a. Liaison Parties. Liaison parties should consist of a qualified officer or senior noncommissioned officer of the supporting ordnance unit or installation accompanied by a minimum number of technicians. The number of technicians should rarely exceed two. Personnel assigned to liaison parties should have a broad knowledge of ordnance service and organizational maintenance and supply operations. They must be tactful and fully impressed with the importance of developing

a high degree of cooperation between the using organization and supporting ordnance unit or installation. The functions of a liaison party will include, but are not limited to, the following:

- (1) Advise the using unit commander in accomplishing his responsibilities for organizational maintenance and supply of ordnance materiel including ammunition.
- (2) Advise using unit commanders in the efficient utilization of ordnance equipment.
- (3) Follow all supply requirements of the using unit to conclusion, to assure a satisfactory status of supply of tools, spare parts, and cleaning and preserving materials for organizational maintenance.
- (4) Determine the status of ordnance major items in the using unit, in order to follow through and assure that the unit has all authorized equipment in serviceable condition.
- (5) Determine the technical instructions and training assistance needed by the organizational ammunition personnel in the proper methods and procedures for handling, storing, transporting, adhering to safety precautions, maintaining unit records, and in promoting economy by the utilization and return to supply channels of reusable, returnable ammunition components and packages.
- (6) Determine the serviceability and completeness of the authorized basic load, where appropriate.
- (7) Determine the exact nature and scope of field maintenance work that can be profitably accomplished at the site of the using unit, in order that a properly manned and equipped ordnance work party can be sent to do the work.
- (8) Determine the technical instruction and training assistance needed by the unit maintenance and supply personnel in order that they may properly perform organizational maintenance and supply of ordnance equipment.

b. Work Parties. Work parties may be of any composition that will accomplish the required mission as determined by liaison. Each individual member of a work party must be thoroughly trained and qualified in the type of work he is to perform. The functions of a work party will include, but are not limited to, the following:

- (1) Perform on-the-spot field maintenance repairs of ordnance equipment in accordance with requirements developed by the liaison party.
- (2) Provide assistance in the instruction and training of organizational maintenance, supply, and ammunition personnel in accordance with requirements developed by the liaison party.

59. Frequency of Visits

a. Liaison Parties. Visits of liaison parties must be frequent and continuous. They should be made as often as the situation permits and in all cases at least once every 30 days. Emphasis will be placed on visits to units receiving low ratings in spot check and technical inspections, in order to assist the commanders of such units in improving the status of their organizational maintenance, supply, and ammunition operations.

b. Work Parties. Work parties will visit supported units as often as necessary to accomplish work requirements determined by liaison parties.

60. Reports

a. Liaison Parties. No formal reports of visits by liaison parties will be made. An informal report outlining the status of organizational maintenance, supply, and ammunition operations of the using unit visited and of the work to be performed will be prepared in duplicate by the liaison party. The original will be furnished the commander of the unit visited and the duplicate will be retained in the files of the supporting ordnance unit or installation. When technical assistance service discloses that due to weather conditions, tactical situation, shortage of personnel, or other adverse conditions organization commanders are unable to perform required organizational maintenance, the commander of the major command having responsibility for field maintenance and supply will be advised, in order that action can be taken to provide the assistance necessary to the using unit to assure that organizational maintenance is accomplished.

b. Work Parties. Repair work accomplished by work parties will be recorded on DA Form 811 (Work Request and Job Order) with appropriate accompanying technical inspection forms properly executed. The appropriate using unit representative will sign the form in acceptance of the work accomplished. An informal report will be prepared in duplicate by the work party, outlining the actual work performed or other assistance rendered. Distribution will be the same as the report prepared by the liaison party.

CHAPTER 4

ORDNANCE STAFF

Section I. ORGANIZATION

61. General

An ordnance officer is provided for every tactical and logistical support command of divisional size or larger and for amphibious support brigades. An ordnance staff officer may be provided for smaller commands when circumstances warrant. It is normal for an ordnance staff officer to be provided for military units, or where some function of ordnance service, such as the reception of ordnance materiel, must be accomplished. The ordnance staff officer is responsible for initiating action to execute the responsibilities of ordnance service in the field which are within the scope of the mission of the command, and for coordinating and supervising the execution of those responsibilities within the command and subordinate commands. The ordnance officer of each command has the following prescribed duties and responsibilities:

a. Initiation, recommendation, and supervision of all matters pertaining to the ordnance mission within the command as outlined in paragraph 6.

b. Special staff officer and chief of the ordnance section on the staff and within the headquarters of the commander.

c. Commands all ordnance units not assigned or attached to subordinate commands of different or combined arms or services.

d. Exercises technical supervision over the operations of ordnance units of subordinate commands.

62. Ordnance Officer

An ordnance officer will be provided in the table of organization or specifically detailed as such for each unit higher than a brigade, for every expeditionary or task force, army group, logistical command, and for all other commands normally commanded by a Major General or higher. An ordnance officer will be provided for a post, camp, station, or base when the scope of ordnance mission justifies. In addition to his responsibility for ordnance service as outlined in paragraphs 6 and 7 and the specific duties and responsibilities of an ordnance officer as set forth in paragraph 61, the ordnance officer on

the staff of an oversea commander has certain additional duties and responsibilities. A fully organized oversea command must assume for its area, certain of the higher level responsibilities normally executed by the Chief of Ordnance. The following represent the principal additional responsibilities of the ordnance officer in an oversea command.

a. Recommend allocation of ordnance troops and organizations as between the rear areas and armies or army groups, when for any reason the types specifically provided for each are insufficient for the task.

b. Local procurement of necessary ordnance supplies and services, beyond the scope of normal procurement, and to include maximum provision for the exploitation of local manufacturing resources.

c. Determination and acquisition of ordnance supply requirements; recommendation with respect to the allocation of the total supply level as between the various major administrative elements of the command; initial distribution and redistribution of ordnance materiel to and between the major administrative elements, for their own use; and determination and reporting of excess stocks of ordnance materiel.

d. Establish technical ordnance supply and maintenance procedures necessary to assure reasonable uniformity within the command and the maintenance of proper records pertaining thereto, with due regard for the requirements of simplicity and uniformity with established doctrine.

e. Establishment of standards of serviceability for ordnance materiel within the command, contingent upon operational requirements and supply availability.

f. Dissemination to neighboring oversea commands and to the Chief of Ordnance, reports of technical information, practicable field expedients, and similar data of immediate or future usefulness.

g. Recommendation for the use and allocation of ordnance equipment and supplies by and to allies and civilian agencies.

h. Authorization of the modification of materiel as required, including delegation of this authority. He will report action taken to the Chief of Ordnance. When unusual conditions are encountered, he acts as a representative of the Chief of Ordnance to coordinate any ordnance developments of immediate importance.

i. Control of regulated items of ordnance to the extent consistent with the policies of the commander.

63. Ordnance Staffs

a. Theater Army Headquarters. There is no table of organization for the office of the theater army ordnance section. Personnel for this office are provided from the theater bulk authorization of person-

nel and the allotment is confirmed in tables of distribution. The size of the ordnance office will vary with the circumstances. It may fluctuate from time to time depending on the size and mission of the theater army command and the state of planning for projected operations. Sufficient personnel must be provided to prepare plans, policies, and directives to guide the organizational structure and operating procedures of ordnance service in the subordinate major commands.

b. Communications Zone Headquarters. The nucleus for the ordnance section of the communications zone headquarters and for subordinate section commands of the communications zone is provided for in the ordnance section of Headquarters, Logistical Command A, B, or C. The ordnance section of these tables of organization and equipment contain sufficient personnel for planning but will require augmentation to make them operational. Figure 7 shows the organization of a type ordnance office, headquarters, communications zone, which is operating the ordnance central supply control agency for the theater. For a sample SOP for the operation of this office, see appendix V. The organization and operation of ordnance office of subordinate logistical commands within the communications zone will be similar to that of the ordnance office, headquarters, communications zone, except for those responsibilities connected directly with central supply control.

c. Army Group. There is no prescribed organization for the ordnance section of the army group. Personnel for the operation of this office must be provided from the bulk allotment of personnel to the theater and confirmed by tables of distribution. The army group ordnance officer has no operating responsibility. However, he does exercise special staff supervision over the allocation of ammunition and regulated items of ordnance general supplies and the allocation of ordnance units between the armies.

d. Army. Personnel for the operation of the army ordnance section are provided for in TOE 51-1. Figure 8 shows the organization of a typical ordnance office of an army. For a sample SOP for the operation of this office, see appendix IV.

e. Corps. Personnel for the operation of the corps ordnance office are provided for in TOE 52-1A. The corps ordnance officer coordinates the movement of army ordnance units within the corps area. He evaluates and consolidates the ammunition requirements of corps troops and transmits them, together with the requirements of the divisions, to the army ordnance officer. When the corps operates as an independent command, the ordnance section must be augmented. Augmentation in this case, is provided by an augmentation column contained in the TOE for separate corps operations. The responsibilities of the ordnance officer of an independent corps are identical with those of an army ordnance officer and include the issue control

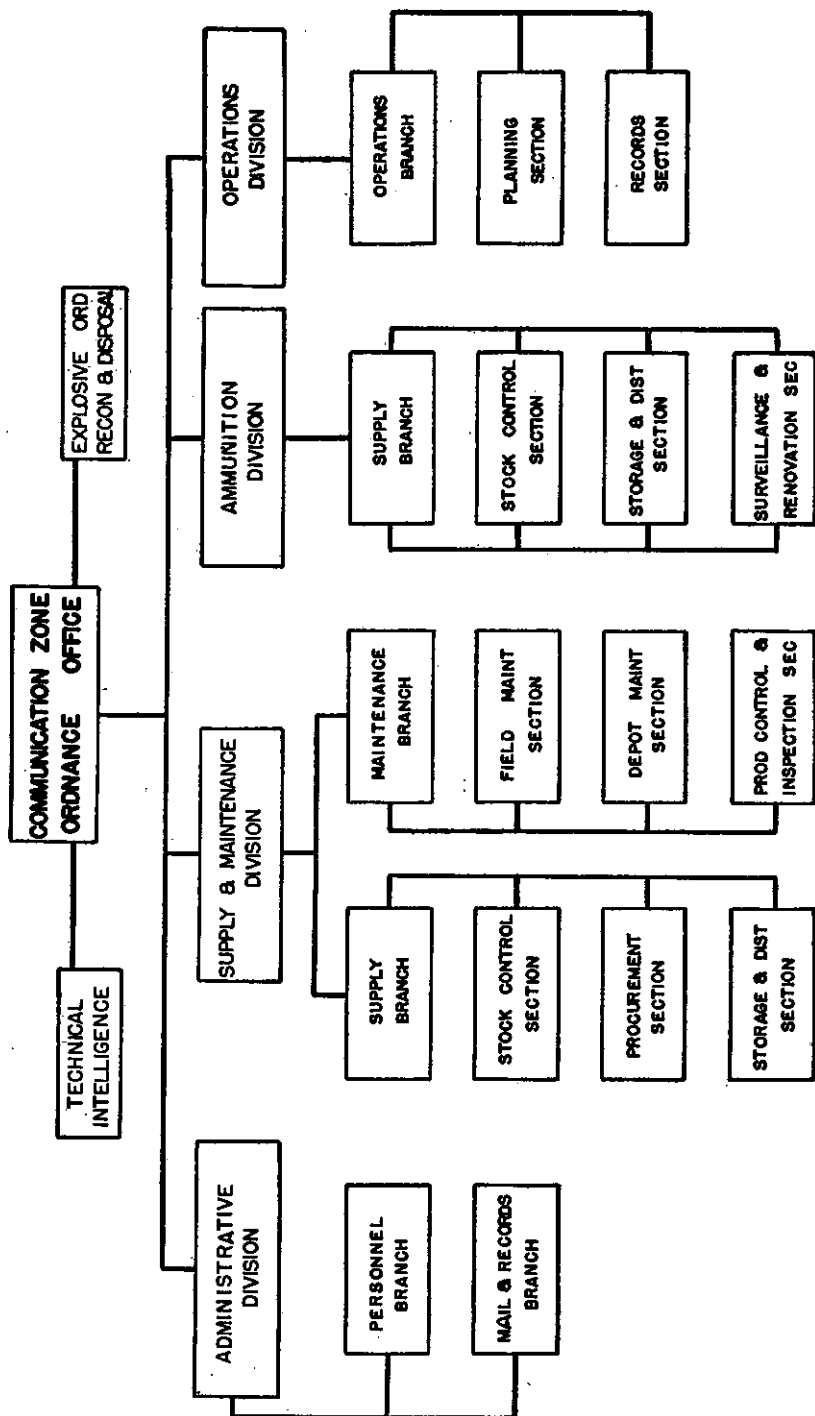
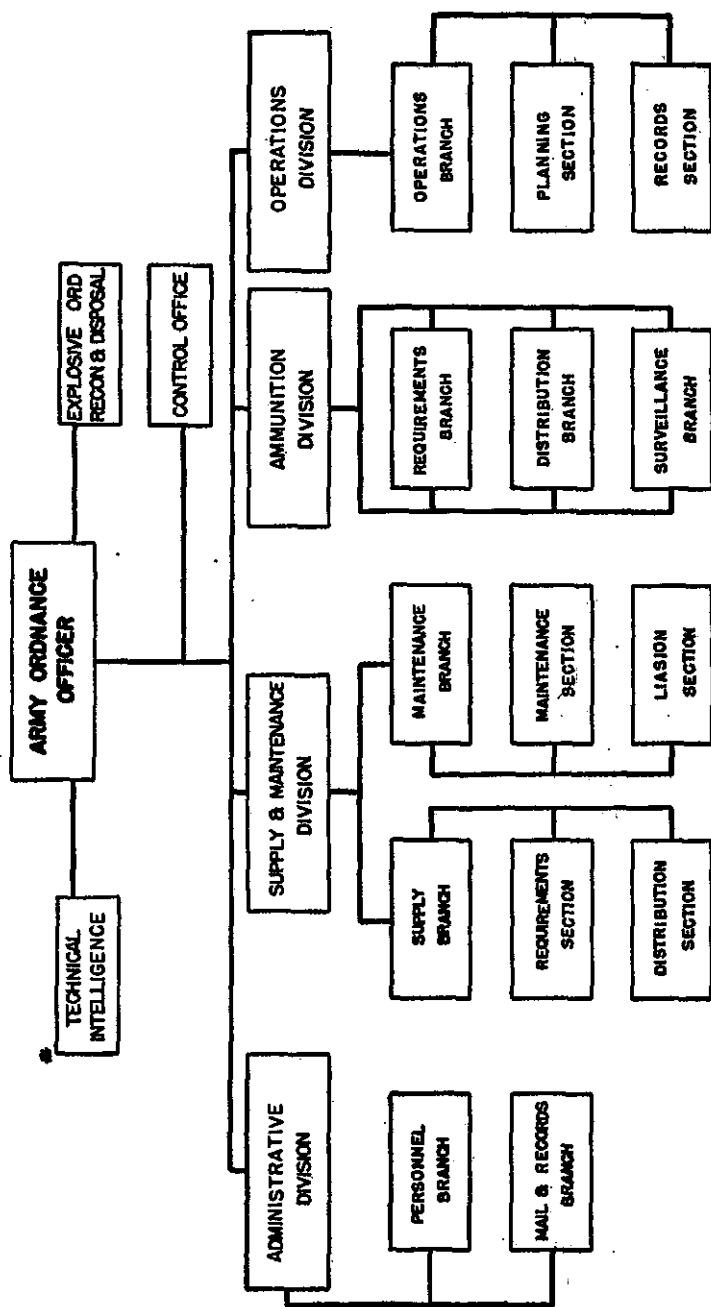


Figure 7. Typical organization of an ordnance office, hdqrs. comz.



* Not orgnis to ZO & E. is drawn from another source

Figure 8. Typical organisation of an army ordnance office.

of regulated items. Ordnance units are attached to an independent corps as necessary to furnish complete ordnance service.

f. Division. The airborne, infantry, and armored divisions each include the office of the division ordnance officer in the organic divisional ordnance unit. This office includes only the personnel necessary for the management of ordnance service within the division. The division ordnance officer performs normal staff functions pertaining to divisional ordnance service, in addition to his duties as ordnance troop commander.

g. Amphibious Support Brigade. The ordnance maintenance company, amphibious support brigade, includes the office of the brigade ordnance officer. This office includes necessary ordnance management personnel to assist the brigade ordnance officer in the execution of his staff responsibilities.

h. Army Task Forces and Joint Forces. The ordnance staff section of the headquarters of army task forces and joint forces are provided for at the time these headquarters are organized. The size of the staff is determined by the mission of the command.

i. Ports. Ports of debarkation are operated by Transportation Corps Headquarters and Headquarters Company, Transportation Port Command C, TOE 55-111 and Transportation Corps Headquarters and Headquarters Company Transportation Port Command B, TOE 55-121. Each of these organizations includes an ordnance section headed by an ordnance officer who is designated port ordnance officer and acts as ordnance staff officer for the port commander. Ports of debarkation normally are under the command of the communications zone commander. However, the command of small coastal ports may be assigned to a subordinate command of the communications zone, or to a tactical commander.

64. The Ordnance Special Staff Assistants

a. General. To assist the ordnance staff officer in the performance of his responsibilities outlined in paragraph 61, assistants are provided as follows: ordnance general supply officers, ordnance maintenance officers, ordnance ammunition officers, ordnance technical intelligence officers, and explosive ordnance disposal officers.

- (1) Ordnance general supply officers, ordnance ammunition officers, and ordnance maintenance officers are included on the ordnance staff at division level and above. Their functions are discussed in FM 9-6 and FM 9-10.
- (2) At army level and above, ordnance staffs include ordnance technical intelligence officers and explosive ordnance disposal officers.

b. Ordnance Technical Intelligence Officers. Technical intelligence officers perform the following functions as part of an ordnance staff:

- (1) Keep the ordnance staff officer informed on all technical intelligence matters.
- (2) Prepare the basic plan for the collection and evaluation of technical intelligence information and for prompt dissemination of the intelligence produced to ordnance personnel of lower echelons. The dissemination of technical intelligence to personnel other than ordnance is normally accomplished by G2.
- (3) Make recommendations to the ordnance officer concerning the assignment of ordnance technical intelligence teams within the command and to lower echelons.
- (4) Make recommendations to the ordnance officer concerning the number of ordnance technical intelligence teams required.
- (5) Maintain liaison with other services and the explosive ordnance disposal agencies to obtain samples of captured enemy materiel or documents which may yield intelligence.
- (6) Report to the ordnance staff officer any deficiencies noticed in the conception, formulation or implementation of the theater technical intelligence field plan, with recommendations for their correction.
- (7) Supervise the evacuation of captured enemy materiel with respect to safety and speed.

c. Explosive Ordnance Disposal Officers. Perform the following functions:

- (1) Keep the ordnance staff officer informed on all explosive ordnance disposal matters.
- (2) Supervise and coordinate all explosive ordnance disposal and reconnaissance activities within the command.
- (3) Make recommendations concerning the number of explosive ordnance disposal squads and explosive ordnance disposal control centers required within the command.
- (4) Make recommendations regarding assignment of explosive ordnance disposal personnel to subordinate commands.
- (5) Cooperate with ordnance technical intelligence personnel in the collection of information which may yield intelligence.

Section II. OPERATIONS

65. Command Versus Operational Control

Command of a unit is exercised by an individual who is assigned to and is present for duty with the unit. Unless otherwise directed by competent authority, the senior member of the unit is its commander. Operational control has been previously outlined as authority delegated by the commander to a special staff officer whereby the latter is authorized to direct the technical and service operations of units assigned or attached to the command by means of plans, policies, and directives issued in the name of the commander. It might be noted in certain divisional organizations that the commander of the organic ordnance unit is also the division ordnance officer and has a dual responsibility. In the event an additional ordnance company is attached to the division, the division ordnance officer has only operational control of that company, unless it is specifically assigned to the division. Command includes the responsibility of operational control, but the converse is not true.

66. Channels of Communication

The two recognized channels of communication between military commands are the "command" and "technical" channels.

a. Command channel is that used by the commander in directing his subordinate units. Communications are either signed by the commander or authenticated by a general staff officer or adjutant general.

b. Technical channel is that used to keep the command channel free from the many administrative details handled by special staff officers. It is the route of direct communication between staff officers of the same branch at different headquarters and is usually confined to normal technical operations not affecting command policies.

67. Routing of Communications

Directives or instructions on ordnance service which affect command policies will be issued through channels of command. Communications will be addressed to the commanding general or the commanding officer of the headquarters concerned, with a notation inviting the attention of the ordnance staff officer. Communications relating to policies and directives affecting ordnance service, and communications requiring action by ordnance service in a subordinate command, will be routed through all intermediate commanders and ordnance staff officers concerned with the implementation of the policy, directive, or action. Technical channel communications that are routine in nature and which involve no departure from existing policy or standing operating procedures, may bypass intermediate headquarters whenever it is apparent that intermediate headquarters are

not concerned and that no action is required by them. Communications will not be routed through a headquarters which has no interest in a matter and which is not expected to intervene therein. Technical directives to ordnance units, not attached or assigned to subordinate commands, are prepared by the ordnance staff officer, for authentication by the adjutant general, unless the ordnance staff officer has been specifically authorized to sign for the commander. Verbal orders issued to ordnance units by the ordnance staff officer, and summaries of agreements reached at conferences of ordnance staff officers, are confirmed through command channels.

68. Policy File

Each ordnance staff officer will maintain a policy file. This file is a summary of the current policies of the commander and of higher headquarters, and of basic operating principles for the staff section maintaining the file. It covers a variety of activities of interest to a staff section and is based on existing orders, on experience, and on past decisions of the commander. The policies may be in the form of brief notes, plans, studies, directives, or sample orders. They may be kept in a looseleaf book or filing case, should be tabbed or indexed, and should be kept up to date. The file changes with commanders and conditions.

69. Journals

The journal of ordnance staff sections and of ordnance units is the official chronological record of events affecting the section or unit. Important incidents are recorded as they occur, including a synopsis of written messages and orders, and a transcript of verbal messages and orders. For further information concerning records and journals see SR 525-45-1 and FM 101-5.

70. Standing Operating Procedures

Ordnance units and ordnance staffs at each echelon of command operate in accordance with an SOP. These SOP's implement those of higher headquarters. They set forth the policy of the commander, are consistent with the principles of organization, and spell out the duties and responsibilities of individuals. Appendix IV and V present SOP's which may be used as a guide for operations in the field and present a more detailed listing of functions and responsibilities of organizations covered. The operating methods and procedures set forth therein are not mandatory. They are intended as a guide only. The operating provisions of any SOP will vary from situation to situation and will depend upon many factors.

CHAPTER 5

PLANNING

Section I. GENERAL

71. General

a. Requirements for ordnance troops and supplies will vary for each operation and may fluctuate during each operation due to such factors as climate, terrain, etc. Proper planning will materially assist the commander in his efforts to provide adequate and continuous ordnance service.

b. Ordnance general supply within a theater of operations involves over 1,000 different major items of equipment, over 120,000 different secondary items of ordnance general supply (repair parts, cleaning and preserving material, and standard hardware, etc.), and over 500 separate items of ordnance Class V supply.

72. Ordnance Plans

a. Basis. Proper anticipation of the ordnance needs of his unit is the function of every ordnance staff officer. If planning is absent, service will be intermittently good and bad. Proper planning is based on the full knowledge of the intentions of the commander.

b. Form. There is no prescribed form for ordnance plans. Only a limited part of the plan is published to the command in administrative orders. The remainder of the plan contains information necessary to G4 for the proper coordination of the ordnance plans with those of other services. The plan, as approved, constitutes the commander's decision and is a directive to the ordnance officer. See check list in appendix II.

c. Preparation. In preparing an ordnance plan, the ordnance staff officer will usually divide it into a plan for—

- (1) Requirement and employment of ordnance troops.
- (2) Ordnance maintenance.
- (3) General supplies.
- (4) Ammunition supplies.
- (5) Reclamation of captured materiel.
- (6) Other aspects of ordnance service, such as the disposition of ordnance stores either by evacuation or destruction when such action becomes necessary to prevent those stores from falling into the hands of the enemy. (This matter involves

consideration of stockages at particular times and places, the influence of tactical situations, and other matters discussed in FM 100-10.)

d. Arrangement. When submitting an ordnance plan to G4, the ordnance staff officer will usually arrange it into three parts:

- (1) Information to be published in the administrative order.
- (2) Recommendations concerning operations which require coordination and approval by G4.
- (3) Detailed information for the employment of ordnance troops.

73. Responsibility for Planning

Each echelon is responsible for making plans based on the plans of the next higher headquarters. It follows that each echelon must continually provide the subordinate units with instructions and information at the earliest possible date. Frequently it is necessary to plan without recourse to firm basis from higher headquarters. However, advance planning **MUST** proceed. All ordnance commanders and staff officers must continually plan for future operations; the higher the echelon, the farther into the future the requirements must be anticipated.

74. Importance of Continuous Planning

a. The necessity of anticipating probable courses of action at some future date demands that ordnance officers, at each echelon of command, continually study the factors affected by changing conditions and formulate plans to meet such changes. There must be no waiting for an order or directive to initiate an ordnance plan. Ordnance officers must be farsighted and courageous enough to make the best possible estimate of the situation and plan accordingly. The best possible plan initiated immediately and modified as changes occur is much better than a perfect plan made too late.

b. In the initial stages of planning, some portions of the ordnance plan will be based on assumptions. As additional information becomes available, changes are made to agree with the facts. This will insure the ordnance plan, timeliness and flexibility to meet all situations. A typical example of anticipating probable courses of action is the establishment and maintenance of a balanced reserve of ammunition and ordnance general supplies to sustain balanced artillery fire power. Plans must include the initial establishment for tubes, recoil mechanisms, spare parts such as gas check pads, firing pins, etc., cleaning materials, and other items of general supply to be consumed in direct proportion to estimated ammunition expenditures.

c. By estimating ammunition requirements for current and planned operations and by estimating the availability of ammunition for these operations, ammunition expenditures can be estimated and forecast

well into the future. Availability of ammunition is estimated by considering quantities on hand within the command, together with a forecast of availability from the next higher command for ensuing periods. These estimated expenditures must be applied to the requirement for change (increase or decrease) in quantities of tubes, recoil mechanisms, etc., thus changing an original plan, based on initial estimations, to agree with current estimations. It is mandatory that, in all planning, ordnance officers follow the maxim that "operations should control supply and supply should *not* control operations." Unless ordnance officers have available, in time for contemplated operations, an adequate supply of ammunition, a balanced stock of general supplies, together with adequate maintenance support, the Ordnance Corps will have failed to discharge its responsibility.

Section II. TROOP REQUIREMENTS

75. Basis for Computation

Requirements for ordnance troop units will be based on the quantities and types of assigned materiel, the support capacities and expected efficiencies of ordnance units, and the contemplated duration of employment and desired effectiveness of the force to be supported. In sustained combat, experience has indicated that the percentage of ordnance troops which may be required in a field army will be in the neighborhood of 5 to 6 percent of the total troop strength.

76. Troop Phasing

Phasing of troops into a theater of operations requires the closest cooperation between the army ordnance officer and the communications zone ordnance officer from the very beginning of operational planning, and must continue until a communications zone is finally established in the theater under a command independent of the army commander. Until that time, the army ordnance officer is in control of the ordnance situation.

a. Army ordnance support in the theater will ultimately depend upon the effectiveness of the ordnance service in the communications zone. Recognition and understanding of this, together with close cooperation with the ordnance officer of the logistical force, is the most effective measure toward the early establishment of an integrated, smooth-working theater ordnance service. Failure to recognize it may lead to a blind desire to phase in units of the army ahead of those of the communications zone, regardless of the actual need and to the detriment of the effectiveness of the ultimately established service. An effective ordnance service in the theater of operations is a continuous system; although different elements of it are under different commands, they must dovetail perfectly and work cooperatively if

maximum results are to be achieved. Operation under different commands does not mean that two separate and distinct services exist, each to be run in its own way without regard for the operations of the other.

b. Normally it will require 60 days, more or less, until the beachhead has been expanded sufficiently to indicate the advisability of dividing the theater into two zones. Until that is accomplished and a communications zone headquarters placed in command of the designated communications zone, the logistical organization will be under army command and subordinate to it. Units of the logistical command entering the theater will be attached to the army and under the control of the army special staff officers. It becomes incumbent, therefore, upon the army ordnance officer to so dispose the army type and the communications zone type units that the latter will be in the position in which they should remain, to develop installations for the future support of a mobile combat organization. To best accomplish this, it is essential that selected units of the logistical organization be brought in at appropriate times in preference to units of the combat zone organization so that they may assume those assignments which they will eventually operate. For example, it is normal that the first ammunition units entering the theater will be army type units. It will be their responsibility to establish an army depot for the supply of ammunition to the combat organizations. This installation, however, would eventually be developed into a base depot. Consequently, as the army moves forward and additional units are required for the establishment of ASP's, it is desirable that communications zone units be brought into the depot in preference to additional army units. Army units operating the army depot can move forward, turning over the establishment to incoming ammunition depot companies of the logistical organization who will remain there and develop it into a major base installation. At a later date, when the ASP's can no longer satisfactorily be supported from the initially established depot, more army type units should be brought in to establish, forward of the base depot, the army depot that will continue to move forward with the army and act as its own basic ammunition supply agency.

c. It is especially desirable that communications zone units be brought in along with army units at the earliest practicable date for the operation of the first general supply depot established in the theater, which should be developed into a major ordnance depot. It is obvious, then, that the phasing of army units and communications zone units cannot be treated as separate subjects independent of each other. In the following paragraphs the phasing of different types of units are discussed and the inter-relation of army and communications zone units is indicated. No attempt is made to lay down specific

rules for the phasing of any particular TOE. Each situation will differ from others and will require special treatment according to the conditions to be met. Only general rules can be given, together with those considerations which should be taken into account in planning.

(1) *Supply units.*

- (a) Supply units must be moved into a theater in excess of the number required to support the combat force directly. The rapid buildup of theater reserves is an important function which must be attacked at once. The number of units engaged in this buildup will depend upon the quantity of reserves established and the rapidity with which they are to be shipped in. The first ammunition and depot type units to move into a theater should be of the army type but should be sufficient only for the direct support of combat elements until the theater has expanded to a point where support of ASP's and maintenance battalions can not adequately be provided from the base installations. Communications zone type units should be brought in as soon as possible to take over the initial establishments, to develop them as base installations, and to receive, store, and document the large flow of reserves which must be accumulated. Not until about D plus 60 days will it be necessary to bring in additional army type units for the establishment of new army depots. From that time on, ammunition and depot companies of the army type should be brought into the theater in numbers proportionate to the combat elements to be supported. The communications zone units engaged in building up the theater reserves will eventually complete their task and be available for direct support assignments in the theater. Until their proportion to the units supported has dropped to normal, it will not be necessary to phase in additional units of that kind.
- (b) A vehicle and artillery park must be established at an early date. This can be handled for a time by an available ordnance unit but should be taken over as soon as possible by a unit designed for the purpose. Since the first park established in the theater will presumably develop into the base park, it is advisable that a communications zone type unit be phased in first and that the army type follow at a later date.
- (c) Guided missile supply units are a combination of supply and maintenance. These units must be phased in with the employment of guided missile firing units. The presently

organized TOE 9-228, "Ordnance Company (Guided Missile Direct Support, CORPORAL)" and TOE 9-229, "Ordnance Company (Guided Missile Direct Support, NIKE)" are considered both direct and heavy support units. Depot support units will be provided as soon as they are developed.

- (d) Failure to phase in supply units compatible with the tonnages to be handled will eventually result in large quantities of unidentified supplies. Supplies which cannot be readily identified or inventoried cannot be placed in stock and consequently cannot be issued.
- (2) *Maintenance units.* The Direct Support Company, TOE 9-7, is the Ordnance Corps' most versatile direct support organization. It performs third echelon maintenance on every type of ordnance equipment except guided missiles. It is important that enough of these units be brought in, in the earliest phases, and that the proportional requirements be maintained at all times. It may even be desirable to exceed the proportionate requirement at the expense of heavy maintenance support companies or direct automotive support companies during the early phases of operation. The heavy support companies and the direct automotive support companies of both army and the field maintenance companies of the communications zone should be brought in, in proportion to the troops supported. Early operations may bring a particularly heavy toll in damaged ordnance equipment and prompt maintenance is essential to restore it to service. It must be emphasized that failure to initially provide sufficient ordnance maintenance units will impair the mobility and firepower of the command either permanently or until proper balance is restored and may well result in increased demand on the national economy for delivery of new major items of equipment.
- (3) *Motor vehicle assembly companies.* Arrival of this unit in the theater should coincide with the delivery of the first crated vehicles, which is likely to be very early. It is not expected that crated vehicles will be landed during the assault phase but they should appear very soon thereafter, since it is the most efficient way of utilizing transport space for the delivery of the maximum number of items. Any type of maintenance company with its organic tools is capable of uncrating and assembling vehicles. The use of maintenance companies for this purpose, however, should be the exception rather than the rule. It is a waste of their particular skills which can better be applied to the function for which they

are designed and, while the equipment they have in their organizations is adequate to accomplish the task, it is not designed for that purpose and will not produce the output that the Motor Vehicle Assembly Company can accomplish.

- (4) *Park units.* Shortly following the Motor Vehicle Assembly Company, organizations must be provided for the receipt, storage, and issue of artillery and vehicles. In the event vehicles are not received in great quantities, it is entirely possible that personnel of the assembly company may be temporarily assigned this mission; however, as crated vehicles are received in larger quantities the Motor Vehicle Assembly Company will not be capable of performing this mission. Therefore, park units must be provided at this phase of operation.
- (5) *Collecting units.* A collecting unit should be brought into a theater at a fairly early date for the receipt of salvage and returned materiel. As soon as maintenance companies get into operation they begin to accumulate large quantities of assemblies, components, and parts which must eventually be passed back to depot repair establishments through collecting points. When those maintenance companies have to move forward, they cannot transport with them those accumulations of salvage and must abandon them unless there is an established collecting point for their receipt. An ordnance maintenance and supply unit can establish and operate a collecting point in the initial stages of operations. In the absence of a collecting unit, it is often necessary to employ an available company of another type for collection point operations. This action, however, should be regarded only as an expedient until a collecting unit can be brought in. Since there will be continuing requirement for a major collection point in the base area, it is advisable that the communications zone type unit, the Collecting Point Company, TOE 9-358A, be brought in first and that the Recovery and Classification Company, TOE 9-167A, not be brought in until a combat zone has been established and a need for an additional collecting point under army control becomes apparent. The recovery mission of this company is not required in the theater in the early phases of operations. Ordnance maintenance units and units of the Arms, include recovery sections which are adequate in the earlier phases. The distribution mission, both transporter and driveaway functions, have been transferred to the Transportation Corps.

- (6) *Depot maintenance units.* The two types of rebuild battalions and the Tire Repair Company should be phased into the theater at a fairly early date. Due to the facilities required for these operations and the extensive equipment which must be installed before the units may become operative, it will require at least 90 days to set up and establish complete depot maintenance operations. During this time, a backlog of returned materiel will have accumulated in collecting points. Sites for their operations must be prepared and a certain amount of construction accomplished before they can occupy them. Until such sites can be procured and properly prepared, usually by corps of Engineer units, they will be unable to function efficiently.
- (7) *Administrative units.* Administrative headquarters (groups and battalion) should be brought in, in proportion to the units to be commanded by them. The service furnished by the group command remains the important key to successful and efficient ordnance service. Failure to phase in strong group commands at the outset of an operation will impair ordnance service to such an extent that it will be difficult to reestablish efficient support.
- (8) *Special units.* The following services provided in TOE 9-510 have no counterpart in other standard TOE. They are the only units provided in ordnance service for the performance of their respective missions:
- Explosive Ordnance Disposal
 - Ballistic and Technical Service
 - Technical Intelligence
 - Ammunition Renovation
 - Integrated Fire Control Repair

In planning for any operation the above units must not be overlooked. Ordnance technical intelligence detachments must be phased into the combat zone immediately in rear of the last assault wave so as to enable it to accomplish its mission of securing the required technical intelligence information. Sufficient cellular type detachments are provided in TOE 9-500 and 9-510 to augment other ordnance services. For example, the field maintenance company, TOE 9-357A, which is normally employed in the communications zone, may occasionally require augmentation by a track vehicle repair team, an integrated fire control repair detachment, or an artillery repair detachment, since no provision for the maintenance of either track vehicles or AA artillery is made in the company.

77. Preparation of Phasing Schedules

a. It is apparent from the above, that the preparation of phasing schedules must be a cooperative effort of the army and communications zone ordnance officers. It must take into account many considerations which are balanced against each other in the light of the transport lift made available for the ordnance service. Frequently it will be impossible for the ordnance officer to secure the movement of the number of troops he considers essential to provide adequate support in the theater. In such cases, he must weigh the respective needs for different types of units and select those which will most effectively accomplish his mission. He must, at all times, be alert to secure his fair share of the transport lift available but, at the same time, must conscientiously avoid demanding more than his fair share at the expense of other services.

b. Reliance must not be placed on the use of auxiliary labor in the early stages of an operation. It will probably be at least D plus 60 to 90 days before labor can be obtained in any appreciable quantity, and longer before it can be trained to reach the limit of its capabilities. In some localities, it may develop that anticipated local labor will not be available, or that it cannot be used as effectively as planned. For the first 3 months of an operation, it must be assumed that the ordnance load will be carried entirely by military personnel. Phasing schedules should reflect this planning.

c. Once a phasing schedule is prepared and approved, it is to be expected that it will have to be continuously revised, both before and after entering the theater. Changing needs, demands, and conditions will arise to plague the planner. He must keep himself constantly advised of developments, both actual and probable, and be prepared to change his schedule as necessary with a view to the provision of optimum service within the limitations imposed upon him.

78. Troop Ceilings

a. *Limitations.* Limitations on the number of ordnance troops that may be employed in an operation is a normal restriction which the ordnance planner must expect to encounter.

- (1) A ceiling on ordnance troops included in any plan may be imposed at any time. It may be made known at the outset, at the conclusion of any planning phase, or after plans are considered essentially complete. In any case, it places upon the planner the responsibility of determining which elements of his service are to be curtailed and to what degree.
- (2) When cuts must be made in what the planner considers to be a minimum provision for meeting his responsibilities, considerable judgement must be exercised. The most careful analysis must be made to determine which elements can be

curtailed with the least harm to the overall effort. Rarely will a proportionate reduction of all types of units be the best solution. Units of certain types will normally appear in such small numbers that the removal of even one unit will amount to a percentage reduction far greater than is adjustable. This reduction might seriously affect the performance of that type of ordnance service.

b. Effects of Reductions.

- (1) Most ordnance units are furnished to provide an optimum balance between the mutually dependent activities of supply and maintenance, except in ammunition service. A reduced supply capability results in an increased demand for maintenance support; likewise, a shortage of maintenance support creates a compensating demand for increased replacements. This abnormal demand for supply can be felt throughout the supply system, ultimately including the factories and the economy of our nation.
- (2) A decrease in the number of supply units impairs the ability of the ordnance service to issue supplies to the user and may force him to go long distances to obtain what should be available nearby. Lack of maintenance will cause deadlines to mount and reduce the serviceable equipment available to the user.
- (3) Provision of a less than adequate ordnance service in the combat zone merely throws the load back on the communications zone. This is reflected in a return through collecting points of repairable equipment beyond the capability of army ordnance maintenance units to handle, and increases the demand for replacement issues. The communications zone inevitably bears the brunt of any overload or any shortage of ordnance troops.

c. Trimming the Troop List.

- (1) Reducing the ordnance troop list is at best a disagreeable job. The first thing that becomes evident is that certain units cannot be removed at all, either because the particular service rendered by them cannot be reduced, or because they appear in such small numbers that the removal of even one will seriously affect the service. Fire control maintenance detachments are indispensable; rebuild battalions are so few that a cut of one may reduce output 20 to 25 percent in a force of medium size. It is apparent that the other units which appear in greater numbers must be cut by more than the stated percentage in order to effect the required saving. Better utilization of personnel is obtained by employing sev-

eral units at reduced strength rather than completely eliminating one unit.

- (2) When a troop list has already been reduced to a minimum in anticipation of the maximum use of auxiliary labor, any cut in the military will increase adverse effects. For example, if a maintenance company can double its output by hiring civilians, and only half as many units have been provided as would be needed otherwise, a reduction of one unit amounts to a reduction in capability equal to two units. Any estimate of the unit's ability to increase output through use of local labor is subject to many variables. However, it is frequently possible that this output can be increased beyond the theoretical by taking on even more civilians, if they are available. The best method for use of auxiliary labor can be effected by using type B TOE tables.

d. Report of Deficiencies. Ordnance service is provided solely to meet the demands of other arms and services. A sound and honest application of ordnance experience and judgment determines what is necessary to meet those demands. No such determination can be exact. The ordnance staff officer must expect to encounter more than he has planned for and to use his ingenuity to cope with unexpected situations. If, however, his service is actually inadequate to perform his mission, it is the user who will suffer. It is, therefore, incumbent upon the planner to advise his superiors when he is convinced that his service is insufficiently manned to meet its obligations. The report should be in writing and should state: (1) The deficiencies in service, (2) the effects they will have on the user, (3) any actions the user should make to minimize the deficiency, and (4) any extraordinary measures that may have to be resorted to in an emergency. This will permit commanders to compare and evaluate the overall service deficiencies they may encounter, to direct such intra or inter-service adjustments as may be necessary, and to take such other steps as may seem desirable to neutralize the effects of inadequate service support.

79. Auxiliary Labor

a. Augmentation. Employment of auxiliary labor for the augmentation of ordnance units and the enhancement of their capabilities to the utmost must be resorted to whenever possible and to the maximum degree profitable. Vague assumptions that such assistance will serve to make up unexpected deficiencies, or that it will provide for standards of service above that contemplated, are not tolerable. The use of auxiliary labor must be planned from the start and with the same meticulous care that is applied to planning the military elements of the troop list.

- (1) Auxiliary labor includes indigenous labor, prisoners of war, and manpower from any other source outside of and above the United States military ceiling, such as foreign military or quasi-military service troops under United States command and control.
- (2) The uses to which prisoners of war can be put are limited, since generally their employment must conform to the rules of land warfare. The availability of foreign military or quasi-military troops will be the exception rather than the rule. The extent to which economy in the use of military personnel can be attained will depend primarily on the amount and quality of indigenous labor available in any given situation. In a literate, industrial nation most skills can be found. If they are available for and amenable to exploitation, they can be used to advantage in most service units. A backward country, on the other hand, may be a source only of strong backs, limited in their usefulness. Intelligence agencies can furnish estimates of the amount, quality, and attitude of auxiliary labor which may be available in any specific situation.
- (3) Indigenous labor may be available in quantity but may not be available in all places where it is required. In the combat zone, for example, the employment of indigenous labor will depend to a great degree on whether the combat zone is in allied or enemy territory. Enemy nationals can sometimes be employed to advantage; however, if they are unfriendly it is not generally practicable to use them in the combat zone itself. In a large center of population there may be an abundance of labor available, whereas in more remote districts it may be almost impossible to obtain it. In such cases, the problem of transporting labor is so great that its use is not justified. In planning an operation, it is not generally practicable to contemplate in advance the use of indigenous labor in the combat zone. Maximum use should, however, be planned for the communications zone.
- (4) The use of prisoners and other quasi-military personnel can be controlled but indigenous labor can exhibit vagaries common to labor everywhere, and which can seriously impede the military effort. It may be necessary to provide limited quantities of food to locally obtained employees. This will usually be of more importance to them than money which may be, of a kind, insignificant in value. Dependent upon the degree of national autonomy or personal economic distress, there can be strikes for higher wages—in food, clothing, or currency. Harvest time will draw rural labor back to the

farm. Aerial or other bombardment will usually drive labor to the hills, often not to emerge until the situation appears reasonably safe again, or hunger becomes compelling. Panic and mass evacuation can result from loss of ground at the front, or rumors of enemy victories or threats. All of these, as well as the usual troubles resulting from ignorance of and failure to conform to local labor laws, union rules, and national customs can disrupt the productivity of civilian labor. These factors limit their utilization when the above conditions may possibly exist and emphasize the need for a solid backlog of self-sufficient military units.

b. Methods of Employment. Auxiliary labor can be, and has been employed successfully, using a number of methods.

- (1) Establishment of labor pools to meet fluctuating and peak demands.
- (2) Substitution of auxiliary manpower for certain military personnel in standard TOE units.
- (3) Augmentation of standard TOE units to increase their normal capabilities.
- (4) Integration of indigenous labor into type "B" TOE units which provide only supervisory personnel. The best method to use will depend upon a number of factors, including the number and degree of skills needed and the relative permanence of the requirement.

(a) *Labor pools.* The commonest method for the use of auxiliary labor is to employ it in pools from which personnel may be dispatched to those requiring assistance. These pools include local labor groups, prisoner of war stockades, or other centrally controlled aggregations of labor. TOE of the 20-series provide military supervisory units for labor so employed. Such labor is most useful in meeting peak loads of military organizations when the organizations themselves are incapable of coping with the extra load. Except as a means of meeting peak loads, pool labor is unsatisfactory. Assistance in the form of a detachment of individuals from labor pools of some sort will enable them to take care of the temporary increase in work to be performed. Pool labor is not an efficient means for permanently augmenting the capabilities of a military unit. Its personnel is likely to differ from day to day, it is responsible to different commanders, and its performance is not up to standards that can be obtained.

(b) *Substitution.* This method of employment does not permit a reduction in the number of units required but does permit those augmented to operate under strength. This

may prove objectionable since the unit, without its full strength and without personnel to substitute therefor, will have difficulty in meeting its commitments. This condition is most likely to prevail when a unit first enters a theater.

- (c) *Augmentation.* When the method of local employment is used, the lower grade military personnel take over the responsibilities of higher positions and the lower grade positions are filled by the auxiliary labor. An ammunition company, for example, can very materially increase its output by the employment of sufficient additional hands. This type of labor will enable it to move considerably greater tonnage than can the military personnel alone. The military personnel, who have been trained in identification, safety regulations, and other requirements which must be met in handling ammunition in the field, become supervisors of the additional labor. Employment in this manner permits a reduction in the number of ammunition companies required in the theater, since the capability of each company will be increased by the auxiliary labor employed.
- (d) *Integration.* Another method of employing indigenous personnel is by integration into type "B" TOE which are provided with supervisory military personnel and equipment to obtain a stated capability.

c. *Equipment for Auxiliary Labor.* Auxiliary labor must be provided with the tools and equipment necessary to the accomplishment of their assigned tasks. This must not be overlooked when the number of TOE units is reduced. In such case, it is necessary that additional TOE equipment be requisitioned on a class IV project basis to provide the auxiliary labor with the means of doing their job. In some cases, this additional equipment is negligible, as in the case of an ammunition company. In certain types of unit the TOE equipment has a greater capability than can be obtained from it by the men available in the organization. The addition of auxiliary labor will permit such equipment to be operated continuously, thereby increasing the output of the unit without requiring the addition of any tools or equipment. Generally, however, it is necessary that class IV requisitions be placed for the issuance of TOE equipment to the full extent of the production demanded above that of which the military units themselves would be capable if operating alone. It is not necessary to provide that equipment which is peculiar to the military and not required by the auxiliary labor.

Section III. SUPPLY REQUIREMENTS

80. Planning Data

Initial requirements for any command are determined by using the most up-to-date information available. Basic data for planning supply requirements in the field is contained in FM 101-10, SB 38-26, Logistics Policies and Priorities, and the ordnance section of army supply manuals. These publications are intended for use as guides in determining initial stockage lists, basic loads, and replacement factors until experience provides a firm basis for change.

81. Element of Time

- The time required to order and deliver ordnance materiel is a major factor in planning and must be considered by all commanders and staff officers in the formulation of plans. It is usual for ordnance supplies to come forward to major commands at fairly uniform rates and every effort is made by higher headquarters to predict these rates and to advise subordinate tactical commanders so they may have a firm planning basis. However, an operation in which supplies will be consumed at more than normal rates may be jeopardized unless plans are prepared in advance to allow for order and delivery time. In order to assess the resources available to the command, determine deficiencies, forecast the need for increased supply rates, and examine the possibilities for substitution or improvisation, the ordnance staff officer prepares and constantly reviews the estimate of the ordnance situation.

PART TWO
CONTROL
CHAPTER 6
SUPPLY AND MAINTENANCE

Section I. GENERAL SUPPLY

82. Centralized Control

a. In order to properly manage the ordnance supply system, the ordnance officer of each theater establishes a stock status reporting system of centralized control whereby every ordnance item within the reporting supply echelons is known at all times.

b. Central stock control for ordnance performs, but is not necessarily limited to, the following functions:

- (1) Maintenance of such historical and statistical records may be required for compiling and analyzing supply data.
- (2) Provides preprinted stock cards for all ordnance units in the theater handling ordnance general supplies.
- (3) Maintenance of theater stocks in accordance with prescribed supply levels.
- (4) Published stockage lists of items authorized each ordnance unit handling ordnance general supplies.
- (5) Recommends changes in supply levels when the need arises.
- (6) Advises the Department of the Army on the status of ordnance supplies within the theater by submitting estimates of future needs.
- (7) Requisitions on the zone of the interior and initiates action to effect local procurement within the theater.
- (8) Controls distribution of supplies in accordance with the desires of the theater army commander.
- (9) Exercises special control over items in short supply.
- (10) Disseminates any information which affects supply.
- (11) Maintains information at all times as to quantities and types of ordnance general supplies due in the theater from the zone of interior and expected dates of arrival.
- (12) Studies all factors affecting the past, present, and future supply status of individual items.

c. To perform these functions, stock control must maintain records which will reflect for each item :

- (1) The requisitioning objectives.
- (2) Total stocks on hand within the theater. This includes stock on hand in depots within the communications zone, plus the stockage of major items within the armies.
- (3) Theater dues-in and dues-out.
- (4) Quantity available through local procurement.
- (5) Items unserviceable but repairable.
- (6) Quantities in transit.

d. This centralized control agency is normally located in the communications zone and is under the operational control of the communications zone ordnance officer. Its records are used as a basis for procurement, requisitioning, distribution of incoming shipment, redistribution of unbalanced stocks, determination, and disposal of surplus, disposition of obsolete items, coordination of rebuild and repair operations with supply demands and revision or determination of replacement and maintenance factors.

83. Automatic Supply

Supplies and equipment are released, shipped to port, outloaded, and delivered to a newly established theater on an automatic basis for a predetermined time, which would vary according to the situation. During the automatic supply phase, units may arrive combat loaded or prescribed loads may be preshipped and issued in the theater. As soon as possible, inventory and stock control procedures are established and supplies are requisitioned in accordance with actual requirements. After inventory and stock control procedures are firmly established, automatic supply of repair parts should be permitted only when new equipment is supplied to the theater. When this is the case, the repair parts, estimated to fill the need until more accurate requirements can be determined, should accompany the equipment.

84. Determination of Requirements

Requirements at all echelons must be supplied on the basis of demands (actual requirements based on experience data). The use of any other basis for determining requirements will not produce the desired results. If resupply were requisitioned on the basis of issue experience only, the supply system would soon become unbalanced and inadequate.

a. *Major Items.* There are two main factors affecting the life of equipment. By knowing these factors and by applying experience data obtained from similar operations, the life expectancy of major items of equipment can be estimated with a fair degree of accuracy

and provisions can be made for their timely replacement. The determination of major item replacement requirements presents no real problem. These factors are—(1) Conditions under which equipment is operated, including combat losses; (2) Efficiency of preventive maintenance.

b₂ Secondary Items. Determination of requirements for ordnance general supplies and parts presents a very complex problem which demands constant attention from thoroughly qualified supply management personnel. It is of the utmost importance that parts lists be carefully screened to reduce slow moving parts to the minimum at all echelons. It is evident that if vast quantities of slow moving parts are allowed to flow through the distribution system, supply lines will not only become clogged but requirements for labor, space, and transportation will increase. Studies conducted during and after World War II have conclusively shown that less than 25 percent of the 120,000 parts then authorized for use in the field kept 95 percent of the major items in operable conditions. It must be emphasized that repair parts are supplied on the basis of recurring demands and not on issue experience alone. Computation of requirements, based on demands, will indicate the quantity and type of repair parts to be stocked at each echelon. Experience indicates that at the present time the number of line items stocked by the various echelons is as follows:

| | |
|--------------------------|-------------------------|
| ✓ Direct Support..... | 3,500 to 5,000 items. |
| ✓ Heavy Support..... | 4,000 to 6,000 items. |
| ✓ Field Army Depots..... | 10,000 to 15,000 items. |
| ✓ ComZ Depots..... | 25,000 to 30,000 items. |

Stockage lists at all echelons will require constant evaluation and revision. By holding the number of line items stocked at each echelon to the minimum, the requirement for space, transportation, and personnel is reduced. At the same time, the mobility of field units is increased.

85. Computation of Supply Levels

The first step in the computation of supply levels is the establishment of a realistic requisitioning objective in terms of days of supply. This requisitioning objective is not a fixed factor but must be reestablished as the factors affecting days of supply change, particularly order and shipping time. The following factors must be considered:

a. Operating Level. The quantities of materiel required to sustain operation in the interval between requisitions or the arrival of successive shipments. These quantities should be based on the established replenishment period (bi-monthly, monthly, quarterly, etc.).

b. Safety Level. That quantity (in addition to the operating level) of materiel required to permit continued operations in the event of

minor interruption of normal replenishment or unpredictable fluctuations in supply demand.

c. Stockage Objective. The maximum quantities of materiel required to be on hand in order to sustain current operations. It will consist of the sum of stocks represented by the operating level and safety level.

d. Order and Shipping Time. The time elapsing between the initiation of stock replenishment action for a specific activity and the receipt by that activity of the materiel resulting from such action. Order and shipping time is applicable only to materiel within the supply system.

e. Requisitioning Objective. The maximum quantities of materiel to be maintained on hand and on order to sustain current operations. It consists of the sum of stocks represented by the operating level, safety level, and the order and shipping time or procurement lead time as appropriate.

f. Stock in Excess of Authorized Levels. After supply levels have been calculated based on normal or existing troop and equipment densities, supply requirements are frequently subject to fluctuation. This fluctuation is caused by factors such as an increase or decrease in troop densities and the resulting change in equipment density; equipment modification lists approved or terminated; change of tactical situation; and an initial over or under estimation of supply requirements. When supply requirements are actually lower than that for which levels were calculated, excesses will be generated. These excesses should properly be evacuated to the next higher supply echelon in order to avail the supply system of these additional items. In connection with the evacuation of these excess items, certain controlling factors should be studied, e. g.: normal order and shipping time; projected troop and equipment densities; and past experience of requirement fluctuations. After a study of these factors, a level will be established over and above the normal stockage objective at which point items actually become excess and should be evacuated. In no case will materiel be evacuated when the total quantity on hand over and above the stockage objective is less than the amount required during a period equal to the order and shipping time.

86. Distribution Control

In an undivided communications zone, the central stock control point controls distribution of stock among depots. When the communications zone is subdivided and operations are decentralized to subordinate logistical commands, the central stock control point controls the distribution of stock between commands. Distribution of stock between supply installations within subordinate commands is controlled by the respective subordinate commander.

87. Handlings

In order to reduce to the minimum the number of times supplies must be handled, stock levels in forward depots should be kept as low as the mission will permit and shipment should bypass intermediate storage points whenever practicable. Methods to achieve this end include careful planning of through shipments, particularly on tonnage items in constant demand; surface or air express transportation systems from rear to forward depots for small specific item shipments, particularly repair parts.

88. Distribution of Repair Parts During Combat

The requirements of ordnance "field maintenance" and supply services, in "direct support" of combat operations takes precedence over requirements for "depot maintenance" in the communications zone. Too many times, major items and assemblies have been evacuated to the communications zone for lack of a repair part or repair kit which have been set aside for depot maintenance and not shipped forward. By supplying the field units the necessary fast moving repair parts, unnecessary evacuation is reduced to a minimum, thus saving time, expense, man hours, transportation, and above all, giving the customer faster and better service.

89. Cannibalization

While accomplishing an immediate mission, cannibalization will retard and destroy ordnance support. The removal of assemblies and subassemblies from a major item without installing the unserviceable one creates an added burden on the supply lines, in that these items must be replaced by new assemblies and subassemblies rather than by rebuilt or reconditioned units. The necessity of carrying added items throughout supply channels reduces the ability of the ordnance service to provide the maximum of other items which are constantly critical in a theater of operations. Also, cannibalization of major items, in the majority of cases, requires that same be evacuated to base shops for repair and greatly adds to the "down time" of the item. This will eventually create a shortage of the major item itself if the cycle is allowed to continue. (The removal of serviceable components from an unserviceable major item is justifiable under emergency conditions, *provided* it is replaced by the unserviceable component. This expedient is considered controlled cannibalization.)

90. Regulated Items

A regulated item is one which is controlled by the chief of a technical service or an oversea command. Regulated and nonregulated items are requisitioned separately. At Department of Army level, regulated items of ordnance are published by Department of the Army

and control is exercised by the Chief of Ordnance. In a theater of operations, authority is normally delegated to the central stock control point to designate certain items as regulated in addition to those appearing on regulated item lists published by Department of the Army.

Section II. ORDNANCE MAINTENANCE SUPPORT

91. Support Roles

Factors having the greatest effect on the requirement for ordnance support are the conditions under which equipment is operated and the extent to which organizational maintenance is performed. The support role assigned to a supply and maintenance unit indicates the type of association it carries on with the organizations based on it for support.

92. Direct Support (Third Echelon)

Direct support designates those units or organizations whose primary mission is the support of using units. It indicates that units so designated provide supported units with supply as well as field maintenance. Included in this designation are ordnance units organic to divisions, ordnance direct support companies supporting nondivisional troops and service elements and field maintenance companies in the communications zone. Under some circumstances, ordnance direct support units may be given the mission of providing maintenance service for another ordnance maintenance unit on a collateral basis. It is normally not attached to the supported unit but remains under the command of its normal higher commander. Ordnance direct support companies which are often given a mission of providing maintenance support for division ordnance support units in addition to their direct support roles are the Ordnance Direct Support Company and the Ordnance Direct Automotive Support Company.

93. Heavy Support (Fourth Echelon)

Heavy support is normally provided by semimobile ordnance maintenance and supply units. Materiel evacuated by units in direct support roles to heavy support units is not returned through maintenance channels. The direct support unit is issued a like item from a supply unit in heavy support for reissue to the using unit. The evacuated materiel is repaired by a maintenance unit in heavy support and returned to supply channels. Heavy support includes heavy maintenance companies, field supply companies, artillery and vehicle park companies, and recovery and classification companies.

94. Depot Support (Fifth Echelon)

Depot support is provided by fixed or semifixed maintenance and supply organizations located in the communications zone. The low mobility required of depot support permits the use of extensive shop equipment and skills capable of complete rebuild of parts, subassemblies, or the end item. It also allows the use of materials handling equipment and improved techniques which make possible the economical handling of a large volume of supplies. The primary mission of depot support is the efficient and economical utilization of all theater resources to provide the ordnance materiel required by troops in the combat zone. Unserviceable materiel and excess materiel evacuated to depot support becomes a part of these theater resources. All capabilities of manufacture, repair, rebuild, and salvage are exhausted by depot support to return the greatest percentage possible of these resources to supply channels. Depot support includes automotive rebuild battalions, armament rebuild battalions, tire repair companies, supply depots, park companies, motor vehicle assembly companies, and collecting points.

Section III. ORGANIZATIONAL MAINTENANCE

95. Organizational Maintenance Responsibility

Responsibility for performance of organizational maintenance, which includes proper operating techniques as well as the normal upkeep and repairs authorized to be done by the organization, lies with the commander of the using unit. The relationship between the using unit and its ordnance support must be such that, regardless of conditions under which maintenance is performed and whether organizational or field, the fact is ever present that the objective of maintenance is to continue the service life of equipment in the hands of the combat troops.

96. Management of Organizational Maintenance

Constant aggressive action must be taken by all ordnance personnel to gain and keep the confidence of the ultimate user in the reliability of ordnance equipment and ordnance service. Once this confidence is gained, relentless pressure must be applied to gain the continuous support of commanders of all echelons to stress organizational maintenance and proper utilization of equipment. Proper management of organizational maintenance is very important to the effectiveness of the overall maintenance program. It is at this level of maintenance that is embodied one of the basic concepts. Materiel will be evacuated no further to the rear than the nearest maintenance function capable of performing the maintenance required to restore it to service. Adherence to this basic concept will result in great savings of transpor-

tation, time, and manpower at a time when these items may mean success or failure to the operation. First in the line of these maintenance functions is organizational maintenance. When the management of organizational maintenance is such that timely, complete maintenance operations scheduled for this level can be carried out, the need for higher echelon maintenance is greatly reduced. It is, therefore, emphasized that commanders of all supporting ordnance maintenance units realize that, though the responsibility for organizational maintenance lies with the using organization, untold profits to the maintenance program will be afforded by their influence on the management of organizational maintenance. Supporting ordnance commanders must at all times know whether a supported unit is capable of performing its organizational maintenance. There are times when the situation is such that a using unit may be able to do more than is normally authorized for its level of maintenance. If it is known that the state of maintenance within a given unit is on a very high plane and it has at its disposal the time and skills needed to perform a more comprehensive maintenance program, full advantage should be taken of the situation and the using unit should be afforded the necessary repair parts required for a fuller utilization of these maintenance potentials by the responsible ordnance staff officer.

CHAPTER 7

EVALUATION OF ORDNANCE SUPPORT

Section I. VISITS

97. Visits by Ordnance Staff Officers

Staff officers must get into the field to discover, through personal contacts and observations, the conditions under which the ordnance troops or field installations are operating, ascertain their capabilities and limitations. On visiting the troops, a staff officer goes to help, not to find fault; to be constructive, not destructive. When his appearance is dreaded, there is something wrong.

98. Observation During Visit

a. On visiting a unit, while the staff officer should avoid a censorious attitude, he should nevertheless cultivate the ability to size up a unit. He should develop a "feel" of the situation. This is gained by the use of the ability to be observant and to analyze what he sees and hears. In his own mind, he should have an organized scheme of knowing what he is looking for. A staff officer must keep in mind that one of the purposes of the visit is to determine whether or not the policies of the commander are being carried out and to further ascertain if these policies are being carried out in spirit as well as in fact.

b. Good staff work requires the staff to know and appreciate fully the situation of the troops, their morale, their state of training, the state of their equipment and supply, and all other conditions affecting their efficiency. "Sensing" such conditions, whether excellent, average, or bad, should be almost akin to an instinctive reaction.

99. Relationship With Commanders

A cordial relationship between staff officers and troop commanders must be developed. Distrust is easily created and is difficult to dissipate. A mutual feeling of confidence must be built up and confirmed by each recurring contact.

Section II. INSPECTION

100. Authority to Inspect

Ordnance inspections must always be arranged through command channels. Inspecting parties will not inspect units of any com-

mand without previously reporting to all commanders concerned. Ordnance inspections are the means through which commanders of all echelons ascertain the serviceability of equipment and efficiency of maintenance. They provide the ordnance staff officer with much of the information required to keep ordnance equipment of using units in combat readiness.

101. Inspection Personnel

a. Inspection personnel will be provided as required by the commander having ordnance field maintenance and supply responsibility. Normally, personnel from direct support ordnance companies or supporting fixed field maintenance and supply installations will be used to perform the inspections described herein.

b. All inspection teams will be under the direct supervision of a qualified commissioned officer. Team members will be fully trained and qualified in the types of materiel to be inspected. They must be tactful and capable of performing satisfactory service with a minimum of supervision. Members of spot check inspection teams must be qualified in prescribed organizational maintenance and supply procedures. The importance of organizational maintenance and supply economy must be instilled in all ordnance inspectors.

102. Elimination of Duplicate Inspections

Commanders making command inspections and inspectors general will take full cognizance of and utilize spot check and technical inspections made within 30 days prior to their inspections. Evidence of a *complete* technical inspection made of a piece of equipment incident to repairs in a field maintenance shop may be accepted by an inspecting officer to meet the requirement for the annual technical inspection. When an item has been repaired in an ordnance shop and the inspection form incident to that repair indicates that the requirements of the next preventive maintenance service have been performed, this service may be considered as meeting the requirements of the next prescribed maintenance service.

103. Types of Equipment Inspections

Inspections of equipment are of three kinds:

- a. Command inspections.
- b. Spot check (percentage type) inspections.
- c. Technical inspections.

104. Command Inspections

Command inspections are made by commanders in all echelons of command to evaluate, personally, operational readiness and the effectiveness of organizational maintenance and supply. They insure correct utilization of equipment, supply economy, and compliance

with maintenance principles. Frequency of inspection will be determined by the commander concerned.

105. Spot Check (Percentage Type) Inspections

a. The frequency of a spot check inspection and the percentage of ordnance equipment to be inspected will be determined by the commander having field maintenance and supply responsibility. Present regulations provide that all organizational maintenance and supply facilities and 10 percent of each type of ordnance equipment in each unit will be inspected at least twice annually. In active theaters, these inspections should be made with greater frequency. This 10 percent sampling will reflect a fairly accurate picture when the inspection involves 300 or more items; however, as the number of items inspected diminishes below 300, the less accurately will the condition of the total be reflected by only a ten percent inspection. Therefore, as the total number of items on hand in a given unit diminishes below 300, the percentage to be inspected should increase. To obtain equivalent accuracy, for a total of 200 items, 12 percent should be inspected; for a total of 100 items, 20 percent should be inspected; for a total of 50 items, 25 percent should be inspected, etc. From this it can be seen that for a unit having five or less of an item, a number approaching 100 percent must be inspected to reflect the overall condition with accuracy. In any case, the equipment to be inspected will be selected at random by the officer in charge of the inspection team.

b. A variation of the spot check inspection, and one which responsible commanders are encouraged to establish, is the roadside inspection. In this type of inspection a team of qualified ordnance personnel is posted on a road carrying heavy traffic, at a gasoline supply point, a ration supply point, or any similar location where vehicles of various units will be found. Vehicles are selected at random by the team and inspected on the spot. Inspections of this type provide a good indication of the adequacy of organizational maintenance on vehicles being operated by units.

106. Technical Inspections

a. The purpose of technical inspections is to ascertain serviceability of equipment, maintenance and supply requirements, and adequacy and effectiveness of facilities and procedures. Inspections of this type are made only after prior notification of the unit to be inspected. As in spotcheck inspections, the authority to order these inspections is vested in the commander exercising command jurisdiction over both the inspecting and inspected unit. Proper handling and documentation of this complete inspection will provide essential planning data for all echelons. Derived information should indi-

cate future requirements for depot maintenance and for replacement, as well as disclose immediate needs for maintenance and application of modification work orders.

b. As a minimum, every item of ordnance equipment in the hands of troops as well as maintenance and supply facilities and procedures will be thoroughly inspected by qualified ordnance personnel once a year. In active theaters complete technical inspections will be made of ordnance equipment before and after major combat operations, or as required. In inactive theaters and in the zone of the interior, complete technical inspections will be made of ordnance equipment in the hands of participating units before and after extensive field exercises.

107. Evaluation of Ordnance Units

a. Inspections of ordnance units are conducted to provide all commanders concerned with an evaluation of the efficiency and economy of performance of the assigned mission and with the status of discipline; to obtain correction of irregularities and deficiencies found to exist; and to suggest ways and means of improving conditions.

b. Since inspection is a command function, inspections of units should be made by qualified members of the ordnance staff or by special inspection teams designated by the commander concerned. By using a uniform system of inspecting and evaluating the units of a command, the commander concerned will have a complete picture of the operating proficiency of his organization. See appendix VI for a sample profile check system.

Section III. REPORTS

108. General

A uniform reporting system must be established. The reports to be submitted, their format, and the reporting schedule will be determined by the office recommending them. It must be emphasized, however, that administrative detail must be held to the very minimum at all times. Each report must perform some useful service.

109. The Ordnance Operations Bulletin

a. Through the medium of the operations bulletin, information is provided from the lowest ordnance echelon to the highest. This operations bulletin, when properly and carefully prepared, provides information necessary for prompt and efficient action on the part of the ordnance officer of the command and also for those in supported or supporting echelons. Difficulties are corrected before they become emergencies. It presents formally the latest official position of the ordnance service and its ability to sustain both present and planned

operations. It makes available to all concerned, ordnance general, technical, and allied information required to keep all headquarters staffs fully informed of the ordnance situation at all times and, if properly presented, this information will form a basis for computations concerning future operations. It also provides one medium of exchange of information, instructions, and directives, which will be of interest to ordnance unit commanders as well as other personnel. It helps mold a team of ordnance service with all personnel equally informed and with ready correct answers to questions and problems. By establishing a uniform procedure for procuring and reporting ordnance information, a publication is created which is easy to prepare, read, and maintain as a historical record of ordnance service in the field.

b. The ordnance operations bulletin is normally prepared by the highest command echelon or operating headquarters of ordnance service. In the case of an army, it would normally be prepared in the army ordnance section. In the case of the communications zone, it would normally be prepared in the ordnance section of the supporting logistical command, etc. In some cases, it may be advisable to have the bulletin prepared by a lower command headquarters, such as an ordnance group; however, caution must be used in this case since the ordnance operations bulletin must reflect the overall status of ordnance service within the entire command.

c. Frequency of preparation will be determined by the appropriate ordnance staff officer to meet the needs of the command. The format and elements of information normally contained in an operations bulletin are shown in appendix VII.

110. Inspection Reports

The completeness of inspection reports will depend upon the purpose of the inspection and the conditions under which it is made. For further information concerning inspection reports and prescribed forms used in connection therewith, see AR 750-925.

APPENDIX I

REFERENCES

The following listed references should be checked frequently for latest changes or revisions relating to material covered in this manual:

1. Army Regulations

| | |
|---------|---|
| 10-370 | Organization and Functions—Ordnance Corps |
| 30-2210 | Rations |
| 45-80 | Ordnance Property |
| 75-15 | Responsibilities for Explosive Ordnance Disposal. |
| 220-109 | Ordnance Service Within Major Commands |
| 310-90 | Distribution of Department of the Army Blank Forms and Publications. |
| 355-5 | Troop Information and Education, General Provisions. |
| 380-5 | Safeguarding Security Information |
| 600-205 | Standards of Conduct of Personnel Assigned to Procurement and Related Activities. |
| 611-103 | Personnel Classification for Officers |
| 700-105 | Motor Vehicles |
| 750-5 | Maintenance Responsibilities and Shop Operation. |
| 750-925 | Inspection and Reports—Ordnance Corps Materiel. |
| 755-145 | Definition of Responsibilities for Explosive Ordnance Disposal. |
| 850-5 | Marking of Clothing, Equipment, Vehicles, and Property. |

2. Special Regulations

| | |
|-----------|---|
| 30-200-1 | Field Rations |
| 40-600-5 | Individual Sick Slip |
| 220-205-1 | Duty Rosters |
| 310-20-5 | Index of Administrative Publications (Army Regulations, Special Regulations, Commercial Traffic Bulletins, General Orders, Bulletins, Circulars, and Army Procurement Circulars). |
| 310-20-6 | Index of Blank Forms |

| | |
|-----------|--|
| 310-20-7 | Index to Tables of Organization and Equipment, Reduction Tables, Tables of Organization, Tables of Equipment, Type Tables of Distribution, and Tables of Allowances. |
| 310-20-29 | Index of Supply Manuals—Ordnance Corps |
| 320-5-1 | Dictionary of United States Army Terms |
| 335-50-1 | Morning Reports |
| 345-100-1 | Correspondence and Publications Files (Companies, Detachments, and similar organizations). |
| 385-155-1 | Prevention of Motor Vehicle Accidents |
| 525-45-1 | Command Report |
| 615-20-1 | Service Record |
| 615-25-15 | Military Occupational Specialties |
| 730-5-1 | Overseas Supply—Distribution |
| 730-10-10 | Overseas Supply—Oversea Requisitioning Agency. |
| 780-5-1 | Depots, Organization. |

3. Field Manuals

| | |
|--------|---|
| 9-6 | Ordnance Ammunition Service in the Field |
| 9-10 | Ordnance Maintenance and General Supply in the Field. |
| 9-40 | Explosive Ordnance Reconnaissance and Disposal. |
| 21-8 | Military Training Aids |
| 21-10 | Military Sanitation and First Aid |
| 22-5 | Infantry Drill Regulations |
| 25-10 | Motor Transportation, Operations. |
| 30-15 | Examination of Personnel and Documents. |
| 70-10 | Mountain Operations. |
| 100-10 | Administration |
| 101-10 | Organization, Technical and Logistical Data |

4. Technical Manuals

| | |
|--------|---|
| 9-1900 | Ammunition, General |
| 9-2810 | Tactical Motor Vehicle Inspections and Preventive Maintenance Services. |
| 10-402 | Mess Management |
| 10-405 | The Army Cook |
| 10-412 | Army Recipes |
| 10-701 | Range, Field, M1937 |
| 12-205 | The Army Postal Service |
| 12-255 | Administrative Procedures |
| 21-305 | Drivers Manual |
| 38-403 | Station Supply Procedure |

5. Supply Bulletins

9-48

Production Control Procedure for Automotive Shops.

6. Miscellaneous Publications

| | |
|----------------|--|
| Ord 1 | Manual for Military Courts Martial Department of the Army Supply Manual—Introduction and Index. |
| Pamphlet 108-1 | Index of Army Motion Pictures, Kinescope Recordings and Film Strips. |
| Pamphlet 310-4 | Index of Technical Manuals, Technical Bulletins, Technical Regulations, Supply Bulletins, Lubrication Orders and Modification Work Orders. |
| Pamphlet 310-3 | Index of Training Publications (Field Manuals, Reserve Officers' Training Corps Manuals, Training Circulars, Army Training Programs and Mobilization Training Programs, Programs of Instruction, Army Subject Schedules, Army Training Tests, Graphic Training Aids, War Department and Department of the Army Posters, and Firing Tables and Charts). |

APPENDIX II

CHECK LIST FOR ORDNANCE PLANS

1. General

The following check list of ordnance plans is suggested as a guide to army ordnance officers for the preparation of the overall ordnance support plan for a combat operation. It is not intended that each item is applicable in a specific situation, nor that inclusion of each appropriate item is a guarantee that an army support plan is complete. Although the list is arranged largely for the army ordnance officer, much of the information is pertinent to corps and division ordnance officers.

2. Information Required for Formulation of an Overall Ordnance Support Plan

- a.* Administrative orders, operation orders, and approved plans in existence.
- b.* A tentative plan prior to formulation of a final plan, including those of other services and related units.
- c.* Troop basis.
- d.* Plan for tactical employment of the command.
- e.* Terrain and climatic studies.
- f.* Materiel status reports from all units.
- g.* Supply availability.
- h.* Intelligence data.
- i.* Authorized supply levels established for supply installations.
- j.* Computation of supply requirements by item and tonnage.
- k.* Computation of resupply requirements by item and tonnage.
- l.* Determination of supply availability.
- m.* Inspection and quality control procedures.
- n.* Form and routing of reports.
- o.* Established recovery and evacuation service, to include disposition of captured enemy materiel.
- p.* Repair, evacuation and recovery priorities based on support availabilities.
- q.* Promulgation to ordnance units and installations of the army G4 approved priorities and tonnage allocation.
- r.* Plan for the use of mobile ASP's if required.

- s.* Forecast of availability of ammunition from supporting logistical command.
- t.* Provisions for technical assistance service.
- u.* Provisions for technical intelligence service.
- v.* Provisions for explosive ordnance reconnaissance and disposal service.
- w.* Provisions for calibration service.
- x.* Established evacuation and destruction plans for ordnance equipment and installations.

APPENDIX III

***SAMPLE ORDNANCE ANNEX TO THE ADMINISTRATIVE ORDER**

Army Forces GRIDIRON
APO 442
121200 Jan 52
(Revised to 19 Feb 52)

Annex 3 (Ordnance) to Admin Plan 1

Maps: SOUTHERN FRANCE 1:250,000 Sheets 27-LYON; 32-GRENOBLE;
37-AVIGNON; 38-FRANCE;
42-MARSEILLES; and 43-ST
RAPHAEL.

1.
 - a. See Annex 2 (Intel) to Opn Plan 1, Army Forces GRIDIRON.
 - b. See Opn Plan 1 and Annexes, Army Forces GRIDIRON.
 - c. Assumptions.
 - (1) Cptr en Ord mtl will not be suitable for issue to US trps.
 - (2) Cptr en autmv equip utilized by Mil Govt will be maintained by auxiliary pers.
 - (3) Common items of ord equip required by the Navy and AF will be furnished by the Army.
 - (4) Field maint spt for ord equip in the hands of Navy and AF pers will be provided by each of these svc respectively. Dep maint spt will be provided by army ord.
2. Ord units will provide ord spt for GRIDIRON forces ashore except items peculiar to AF and Navy in accordance with AR 220-109, Theater Ordnance Instructions and Army Forces GRIDIRON SOP as modified or supplemented by this annex.
3.
 - a. *Thirteenth Army.* Thirteenth Army will provide for the fol ord svcs.
 - (1) Ord direct and hv spt for all units in the army area.
 - (2) Ord ammo spt for army.
 - (3) Operation of ord gen sup dep.
 - (4) Operation of ord arty and veh park.
 - (5) Operation of army ord hv maint svc.
 - (6) Ord rehabilitation svc for units withdrawn from combat.
 - (7) Ord tech svcs as required.
 - b. *GRIDZONE.* GRIDZONE will provide for the following ord svcs.
 - (1) Operation of ord sup deps in GRIDZONE for Thirteenth Army and GRIDZONE spt.
 - (2) Operation of ord ammo deps in GRIDZONE for Thirteenth Army and GRIDZONE spt.
 - (3) Operation of ord veh parks in GRIDZONE for Thirteenth Army and GRIDZONE spt.
 - (4) Ord field maint spt for all units in GRIDZONE.
 - (5) Ord depot maint svc for Thirteenth Army and GRIDZONE.
 - (6) Ord tech svc spt as required.

*Classification must be made in accordance with AR 380-5.

4. a. *General Supplies.*

- (1) Stock levels: See Admin Plan 1, Army Forces GRIDIRON.
- (2) Regulated items: Mtl listed on the MTO regulated items list, will be issued in accordance with priority directives when published, otherwise ord SOP MTO will govern.
- (3) Repair parts and equipment:
Resupply of repair parts and equip will be in accordance with ord SOP MTO.

b. *Ammunition.* See Admin Plan 1, Army Forces GRIDIRON.

Ammo sup will be in accordance with FM 9-6, May 1951, and ord SOP MTO.

c. *Captured Enemy Ordnance Materiel.*

- (1) Cpтр en ord mtl other than ammo will be evac thru ord maint channels. Cpтр en ammo will be evac thru ammo channels. Dangerous items of ammo will be disposed of by qualified ord pers only. Cml ammo will be rept and disposed of by Army Cml pers. Mines and booby traps will be disposed of by qualified engineer personnel.
- (2) When new or unusual items of en ord mtl are cpтр, rept will be rendered without delay through intel channels to Army G2 with copy to the army ord off.
- (3) Where considered nec by the unit cmdr, combat units may use en ord mtl and ammo. Rept will be made to the army ord off of all en ord mtl used by our trp for combat purposes.
- (4) All ord disposal activities will be under the direction of an Explosive Ordnance Disposal Squad.

5. a. *Maintenance.*

Maint procedure will be in accordance with FM 9-10 dtd Aug 51 and ord SOP MTO.

b. *Combat Loading.*

Combat loading will be in accordance with ord SOP MTO.

c. *Inspection.*

- (1) Command inspection will be conducted as directed by major unit cmdrs.
- (2) Cmdrs having responsibility for field maint will prescribe scope and frequency of spot check inspections.
- (3) Technical inspections of ord mtl will be conducted as directed by each maj emd.
- (4) Inspections will be conducted in accordance with FM 9-10, TM 9-1100, TM 9-2810, and AR 750-925.

d. *Beach and Port Operations.*

- (1) The doctrine of assigning ord units to a continuing mission is to be followed. To accomplish this, GRIDZONE units are attached to shore party and will spt *initial* opn as follows:
 - (a) 1951st, 1952d and 1953d Ammo Deps Cos, 950th Ord Bn Hq & Hq Det (Ammo), and a det of 905th Ord Gp Hq & Hq Co will establish and operate ammo dumps in the vicinity of beaches and sup combat units until arrival of army ammo co.
 - (b) 1961st Ord Sup Dep Co and a det of 960th Ord Bn Hq & Hq Det, will initially establish ordnance general supply installations.
 - (c) 5961st Ord DAS Co will be especially prepared for DUKW maint, will at the beach under the shore party ctl perform the following missions:
 1. DUKW maint.
 2. Maint of wheeled veh, and small arms in vic.
 3. Acceptance, storage, and issue of phased ord gen sup landed over the beach, prior to the arrival of dep co's.

- (2) Similar type army ord units will pass through these instl at the proper time to perform their assigned missions.

e. *Waterproofing.*

- (1) Veh to be landed over the beaches will be waterproofed by each orgn under the supervision of ord tech representatives of GRIDZONE. The completeness and thoroughness of waterproofing is the responsibility of the orgn cmdr. Temporarily attached army ord units will render such assistance as may be directed by the appropriate cmdr.
- (2) All veh to be debarked prior to D plus 5 will carry sufficient oil of proper grade to effect a complete change of crankcase oil.

f. *De-waterproofing.*

De-waterproofing will be accomplished in accordance with Ord Special Instructions MTO (Special instructions, omitted).

6. MISCELLANEOUS.

- a. Loc of ord office Thirteenth Army, GRIDZONE, and this Hq will be announced.
- b. Evacuation or destruction of ordnance stores: Disposition of ord stores by evac or destruction where such action becomes nec to prevent capture by the en, will be accomplished in accordance with Ord Special Instructions, MTO. (See Special Instructions, omitted).
- c. Reports.
Rept will be submitted in accordance with instructions of appropriate higher emdr.
- d. Liaison:
Close liaison with supported units will be maintained continuously by the supporting ord emdrs to guarantee complete ord svc to all units.
- e. Supply economy:
Sup economy will be vigorously enforced.

ANDERSON
General, USA

Distribution
Special

OFFICIAL
/S/ Black
G4

APPENDIX IV

SAMPLE SOP, ARMY ORDNANCE SECTION

1. General

Organization of the ordnance section of an army headquarters is prescribed by the army ordnance officer. It usually consists of a control office, administrative division, operations division, ammunition division, and a combined supply and maintenance division. Also, explosive ordnance reconnaissance and disposal personnel are assigned and technical intelligence representatives are attached. The following sample SOP, which represents the organization of the ordnance section is intended for use as a guide in the preparation of an SOP.

2. Control Office

a. The control office surveys, gathers, studies, analyzes, and evaluates data on operational efficiency of organization procedures and methods, and presents appropriate recommendations for improvement thereof to the Ordnance Officer.

b. Initiates ordnance policy and recommends changes when required.

c. Provides a management counseling service, supervises statistical and reporting procedures.

d. Determines essentiality on authorizing use of internal recurring reports and forms; assisting operating heads in the development of recurring reports and forms.

3. Administrative Division

a. Personnel Branch.

(1) Maintains liaison with G-1 section on all personnel matters.

(2) Maintains records concerning strength of various ordnance units and names and qualifications of all ordnance officers in the army.

(3) Makes recommendations concerning future assignment of casual commissioned or enlisted ordnance personnel.

(4) Takes any other action necessary regarding personnel matters.

(5) Maintains duty roster for section duty officer and clerks that will assist him.

b. Mail and Records Branch.

- (1) Supervises operation of message center to insure prompt handling of all incoming and outgoing correspondence.
- (2) Must be thoroughly familiar with administrative procedure of the headquarters in order to insure high standards of administrative exactness in all work done by the ordnance section.

4. Operations Division

This division is composed of an operations branch which is divided into two sections whose functions are discussed below:

a. Planning Section.

- (1) Makes recommendations to Chief of Operations Branch regarding disposition and availability of ordnance units.
- (2) Prepares ordnance troop requirement memorandum and forwards it to G4.
- (3) By frequent contact, both personal and official, information is secured from higher headquarters concerning ordnance units that may be available to army.
- (4) Maintains liaison with G2 and G3 to keep abreast of the tactical situation and makes this information available to individuals concerned.
- (5) Receives recommendations from the ammunition and the supply and maintenance divisions, incident to assignment and movement of ordnance units.
- (6) Conducts training inspections of newly assigned ordnance units to determine capabilities and limitations.
- (7) Considers and takes administrative action concerning recommended changes in ordnance tables of organization and equipment.
- (8) Compiles data received from other divisions and writes the ordnance annex to the administrative order.
- (9) Exercises general supervision of special training of units.
- (10) Maintains any other data pertaining to efficient operation and planning for ordnance support of an operation.
- (11) Keeps data on transportation requirements for movement of ordnance units and equipment by various means of transportation.
- (12) Prepares budget estimates in final form for submission.
- (13) Maintains liaison with Army Transportation Section, relative to the movement of ordnance general supplies and ammunition.

b. Records Section.

- (1) Establishes form and method for publication of the ordnance operations bulletin.

- (2) Insures maintenance of maps and information regarding tactical situations and, if required, troop dispositions.
- (3) Secures any other data relative to the above.
- (4) Maintains consolidated ordnance journal.
- (5) Maintains map to show list of ordnance troops in the army and their location.

5. Ammunition Division

a. Requirements Branch.

- (1) Determines requirements for type and amount of ammunition that will be required to sustain both present and planned operations.
- (2) Advises the supporting logistical command regarding ammunition requirements supply rate and date ammunition must be available.
- (3) Furnishes logistical data to divisions of the ordnance section and other interested agencies.
- (4) Calculates initial requirements for a combat operation; maintains liaison with supporting logistical command regarding supply situation, plus furnishing a continuing estimate of future requirements for the operation.
- (5) Prepares and maintains charts and records on ammunition to permit rapid calculation of logistical data.
- (6) Maintains close liaison with supply and maintenance division to insure that weapons list, used in the planning of ammunition requirements, is consistent with density of the army troops being supported.
- (7) Prepares for interested agencies such ammunition statistical data on past operations as may be required.
- (8) Recommends increases or decreases in the army available supply rate.
- (9) Prepares plans for establishment of new supply installations within the army. Coordinates the reconnaissance and location of new ammunition supply installation with the corps being supported.
- (10) Prepares plans, policies, and directives to control the operations of ammunition service in the army area.
- (11) Submits the requirements that the ammunition service will have for space, labor, transportation, and construction. Insures that those requirements are met in a degree with the needs and importance of ordnance ammunition service.
- (12) Recommends the location of new ammunition supply installations and closeout of old ammunition supply installations. On all of the above, effects necessary coordination with the corps being supported and other agencies concerned.

- (13) Advises higher headquarters of unusual requirements, to support projected operations; requirements for new or modified types of ammunition, and of any type of ammunition no longer required by the army.

b. Distribution Branch.

- (1) During operations, maintains liaison with G3 and G4 incident to the tactical situation and distribution problems involved in the supply of ammunition to the ultimate user.
- (2) Advises G4 on the current availability of ammunition and the consequences that anticipated shortages will have on proposed operations.
- (3) Makes all necessary calculations regarding logistics of ammunition supply.
- (4) Keeps up-to-date records of ammunition on hand and en route to army ammunition supply installations.
- (5) Receives ammunition allocations from the communications zone, calls ammunition forward from communications zone depots against credits on hand and keeps constant check on status of shipments until received by the army depot or supply point.
- (6) Maintains close liaison with supporting logistical command as to status of ammunition stocks in their supply installations.
- (7) Maintains stock at prescribed levels in army ammunition supply installations.
- (8) Issues shipping orders for the movement of ammunition from one supply installation to another within the army area.
- (9) Receives the allocation of ammunition credits and the available supply rate for the army and confers with G3 and G4, to determine the available supply rate for each corps.

c. Surveillance Branch.

- (1) Inspects ammunition supply installations under army control to insure that authorized safety, storage, and supply procedures are being complied with and that supply economy is being exercised.
- (2) Investigates and reports on malfunctions and accidents where ammunition is involved.
- (3) Investigates reported unserviceable stocks and recommends action in regards to renovation.
- (4) Makes any other inspections of ammunition that are deemed necessary.

6. Supply and Maintenance Division

a. Supply Branch.

(1) Requirements Section.

- (a) Determines requirements for major items and submits data to communications zone, Ordnance Section, for supply action.

- (b) Coordinates with maintenance branch to insure that critical items of general supply receive a maintenance priority.
 - (c) Makes analysis of reports from field units concerning the status of major items authorized and on hand in their organizations.
 - (d) Maintains accurate, up-to-date records of major items of ordnance equipment authorized and on hand in the army area, furnishing such data to interested agencies.
 - (e) Maintains logistical data on ordnance general supplies to facilitate estimates of tonnage and space requirements.
 - (f) Charged with furnishing recommendations to G4 as to the advisability of approving requests for materiel over and above authorized allowances, which have been submitted by the field.
 - (g) Furnishes ammunition division with weapon lists based on the current troop list of army troops.
 - (h) Maintains an up-to-date policy file for the supply branch.
 - (i) Maintains a complete file of publications of interest to the supply branch.
 - (j) Maintains a record of combat losses of major items.
- (2) *Distribution Section.*
- (a) Controls flow of ordnance general supplies to maintain a balanced distribution in the field.
 - (b) Initiates action to correct shortages in field units and depots.
 - (c) Furnishes recommendations as to the adjustment of ordnance unit stock levels.
 - (d) Maintains an accurate, up-to-date record of totals of major items and critically short assemblies on hand in the army ordnance supply system. Recommendations are made as to the adequacy of the supply support being furnished by the supporting logistical command.
 - (e) Furnishes list of regulated major items which must be directly controlled by the army ordnance office to insure that:
 1. An equitable distribution is made to the field.
 2. Items will be available to cover the requirements of forthcoming combat operations.
 3. Those units which are short of materiel due to the exigencies of combat or other reasons will receive necessary equipment prior to units which have been assigned a lower priority of issue.
 - (f) Furnishes all assistance possible to the field in expediting emergency requisitions for major items or repair parts.

- (g) Makes constant analysis of the army supply system for the elimination of possible "bottle necks", advising the supporting logistical command of unusual demands anticipated.
- (h) Serves as a "troubleshooter" on supply problems between field units and supporting supply installations.
- (i) Makes constant visits to the field for the improvement of relations and understanding between the using unit, the field supply units and supply branches, ordnance section, headquarters army.
- (j) Maintains liaison with G3 and G4 concerning the tactical situation and general supply problems incident thereto.
- (k) Operates closely with operations division and their technical assistance teams to insure that the most effective supply practices are being observed in the field.

b. Maintenance Branch.

(1) Maintenance section.

- (a) Responsible for the formulation, implementation, and dissemination of all policies concerning the maintenance of ordnance materiel.
- (b) From requirements furnished by supply branch, determines maintenance priorities which are furnished to field maintenance units.
- (c) Maintains liaison with field maintenance units to insure that an effective maintenance support is furnished to army units.
- (d) Establishes maintenance standards and makes this data available to ordnance technical assistance teams for dissemination to the field.
- (e) Receives reports from these teams, consolidates results, and prepares correspondence for forwarding through command channels to commanders concerned, outlining deficiencies noted, plus making recommendations regarding action to be taken where it is apparent that sheer negligence or unfamiliarity with proper procedure has caused the maintenance deficiency.
- (f) Furnishes inspection personnel for conducting the ordnance phase of—
 1. Inspections conducted by the army commander for determination of the "combat effectiveness" of divisions, regiments, etc.
 2. Inspections deemed necessary by G3 or G4.
 3. Annual Inspector General inspections.
- (g) Prepares findings of above inspections, plus recommendations for corrective action to be taken and forwards complete report to the interested army headquarters sections.

- (h) Acts as technical advisor to the Inspector General on investigations of reported unsatisfactory maintenance conditions in army units.
- (i) Maintains up-to-date policy file for the maintenance branch.
- (j) Evaluates data contained in the Ordnance Operations Bulletins.
- (k) Disseminates technical data and recommendations to concerned ordnance units.
- (l) Makes studies and furnishes recommendations regarding malfunctions of ordnance materiel.
- (m) Responsible for Modification Work Order Program. Submits required reports and when necessary, arranges for supply of modification kits through supply branch.
- (n) Maintains file of pertinent publications.
- (2) *Liaison Section.*
 - (a) Has the prime mission of effecting:
 1. Liaison between the army ordnance maintenance branch and field maintenance units.
 2. The furtherance, by means of constant visits to the field, of a better relationship and understanding between the using unit, army maintenance units, and maintenance and supply division, ordnance section, headquarters army.
 - (b) Maintains liaison with maintenance division of the supporting logistical command ordnance section.

7. Explosive Ordnance Disposal and Technical Intelligence

At army level, the ordnance staff contains an explosive ordnance reconnaissance and disposal representative and an ordnance technical intelligence representative. Their functions are discussed in paragraphs 39 through 52.

APPENDIX V

SAMPLE SOP ORDNANCE SECTION HEADQUARTERS COMMUNICATIONS ZONE

1. Communicatoins Zone Ordnance Office

Normally this office is delegated the responsibility for the overall supervision of all phases of the supply and maintenance of ordnance general supplies and ammunition for the theater. To accomplish this mission, it has been organized into four divisions—Administrative, Ammunition, Operations, and a combined Supply and Maintenance. Explosive ordnance reconnaissance and disposal and technical intelligence representatives are assigned as required. Functions of each are discussed in succeeding paragraphs. This SOP is based on a situation where operations are of a sufficient size to require a subdivided communications zone with operations decentralized to subordinate logistical commands.

2. Administrative Division

a. Personnel Branch.

- (1) Maintains records concerning strength of various ordnance units and the names and qualifications of all ordnance officers in the communications zone.
- (2) Makes recommendations concerning future assignment of casual, commissioned, or enlisted ordnance personnel.
- (3) Takes any other action necessary regarding personnel matters.

b. Mail and Records Branch.

- (1) Supervises operation of message center to insure proper handling of all incoming and outgoing correspondence.
- (2) Supervises security measures and exercises top secret control.
- (3) Maintains section journals, prepares staff reports and histories.
- (4) Reviews all correspondence for adequacy and format.
- (5) Maintains suspense system on reports and correspondence.
- (6) Receives, registers, routes and dispatches all correspondence.
- (7) Maintains central correspondence.
- (8) Provides clerical assistance for staff divisions.
- (9) Requisitions publications and supplies, maintains ordnance office property account and reference library.

3. Operations Division

This division is composed of an operations branch which is divided into two sections whose functions are discussed below:

a. Planning Section.

- (1) Determines required management data.
- (2) Establishes uniform procedures for collection, assembly and presentation of management data in the form of statistics, charts and graphs.
- (3) Proposes plans which, where implemented, will provide an efficient and effective ordnance support.
- (4) Prepares budget estimates in final form.
- (5) Prepares consolidated reports to higher headquarters.
- (6) Determines current and planned locations of assigned or attached ordnance units.
- (7) Prepares ordnance troop requirements for present and planned operations.
- (8) Supervises the preparation and implementation of ordnance training directives.
- (9) Receives recommendations from the ammunition and the supply and maintenance divisions incident to assignment and movement of ordnance units.
- (10) Coordinates the movement of ordnance units from the staging area to the army area.
- (11) Conducts training inspections of newly assigned ordnance units to determine capabilities and limitations.
- (12) Considers and takes administrative action concerning recommended changes to Ordnance Tables of Organization and Equipment.
- (13) Compiles data received from other divisions and writes the ordnance annex to the administrative annex.
- (14) Keeps data on transportation requirements for movement of ordnance units and equipment by various means of transportation.
- (15) Maintains liaison with transportation section, ComZ headquarters, relative to the movement of ordnance general supplies and ammunition.

b. Records Section.

- (1) Maintains up-to-date ordnance operations maps to show list of ordnance units and their location in the ComZ.
- (2) Establishes form and method for publication of the ordnance operations bulletin.

4. Ammunition Division

This division is composed of a supply branch which is divided into three sections whose functions are discussed below:

a. Stock Control Section.

- (1) Responsible for requisitioning ammunition from the zone of interior.
- (2) Management of ammunition stock control for the theater as a whole.
- (3) Advises the theater ordnance officer of ammunition available for specified periods and of ammunition forecasts for future periods.
- (4) Maintains status of all ammunition on hand, and due into the theater.
- (5) Receives ammunition allocation from theater ordnance officer and directs shipment to fill allocations.
- (6) Receives ammunition stock status reports from logistical commands and armies. Periodically, consolidated reports, which reflect the theater status of stocks, are transmitted to the theater army commander and to designated ports of embarkation in the zone of interior for the purpose of maintaining stocks at prescribed levels in the ComZ.
- (7) Directs, via shipping order, the movement of ammunition stock between subordinate commands within the ComZ.
- (8) Recommends change in the theater supply level.
- (9) Directs issue of ammunition to units located within or passing thru the ComZ.
- (10) Directs the movement, as required, of ammunition into the combat zone.

b. Storage and Distribution Section.

- (1) Obtains a policy on the handling and distribution of toxic filled chemical ammunition and prepares instructions to implement this policy.
- (2) At stated intervals, usually each tenth day, prepares a detailed report for the ComZ commander concerning status of ammunition within the theater, together with a report on the scheduled arrival of ammunition shipments from the zone of interior. Upon receipt of allocation instructions from the army group ordnance officer, causes credits to be established in favor of the armies.
- (3) Advises the theater ordnance officer, for information of the Chief of Ordnance, of unusual requirements for ammunition in sufficient time for the demand to be met. Expresses the need for new or modified types of ammunition in sufficient detail to permit development to be initiated. Reports on any types of ammunition no longer required in the theater or required in reduced quantities, in order that production may be curtailed.

- (4) Maintains constant liaison with the zone of interior shipping ports, regarding the ammunition supply situation plus furnishing a continuing estimate of future requirements.
- (5) Prepares plans, policies, and directives to control the operations of ammunition service in the ComZ.
- (6) Recommends to theater ordnance officer changes in theater day of supply and changes in the conditions under which ammunition is supplied by the responsible zone of interior supply agency.
- (7) Constantly interprets proposed operational plans in terms of the projected availability of ammunition and the ability of ComZ ammunition service to provide support.
- (8) Reviews ammunition reports and requisitions on the zone of interior to insure that requirements are not pyramided and do not impose excessive demands on production.
- (9) Exercises technical supervision over the discharge of ammunition at ports and maintains liaison with the transportation staff officer to insure that ports are cleared promptly and that ammunition shipments are expeditiously moved to their destination.
- (10) Insures that care is taken in the reporting, storage, maintenance, and distribution of items in short supply to obtain the maximum utilization of limited resources.
- (11) Constantly inspects the activities of ComZ ammunition activities to insure that operations are efficient and that prescribed storage procedures are in effect.

c. Surveillance and Renovation Section.

- (1) Responsible for the direction of inspection, classification, segregation, reconditioning, and renovation activities.
- (2) Responsible for the formulation of inspection plans to cover the inspection of ammunition stocks both in the hands of troops and ComZ stock.
- (3) Formulates maintenance schedules for the reconditioning of unserviceable ammunition by renovation units.
- (4) Establishes procedures for the receipt, classification, and final disposition of fired cartridge cases, ammunition packing material, and other items resulting from expenditure of ammunition in the theater.
- (5) Directs the program of receipt, inspection, and disposal of all captured enemy ammunition stocks.
- (6) Investigates and reports on malfunctions and accidents where ammunition is involved. Takes necessary action for suspension of use and, if necessary, production of types or lots of ammunition.
- (7) Makes any other inspections of ammunition that are deemed necessary.

- (8) Personally reviews measures for the safety of ammunition personnel and the security of ammunition installations to reduce the possibility of loss of life and ammunition stocks from explosion, fire, or enemy action.

5. Supply and Maintenance Division

This division is charged with the overall supervision of all matters pertaining to supply and maintenance requirements, which entails the requisitioning, procurement, storage, distribution, documentation, operation, maintenance, reclamation, evacuation, and salvage of Ordnance Class II and IV supplies; determination of the effectiveness of the ordnance supply and maintenance program, and to make recommendations for the improvement thereof; to supervise the implementation of directives developed therefrom.

a. Supply Branch. The supply branch is divided into three sections whose functions are discussed below:

(1) *Stock Control Section.*

- (a) Computes theater requirements for all ordnance general supplies.
- (b) Analyzes requirement for possibility of a theater supply of an item by rescheduling of theater rebuild priorities. Every effort is made to reduce the theater supply load on the zone of interior.
- (c) Recommends priority schedules on rebuild of materiel to cover theater requirements for the predictable future.
- (d) When emergency requirements develop, due to the tactical situation, or for other reasons, initiates emergency supply action to furnish the required items by lateral distribution, theater rebuild facilities, or from the zone of interior. If required, initiates action to ComZ transportation section for air or "MARINEX" shipment from the zone of interior and/or priority scheduling of rebuild to meet the need. Through close coordination with subordinate commands insures that required items reach the point of demand with the least practical delay.
- (e) On habitually critical short supply items, maintains a constant status of supply based upon status reports from subordinate and army commands of the theater. When it is apparent that established stock levels are inadequate to cover the theater requirements, initiates action to raise the stock levels.
- (f) Receives and reviews copies of ship manifests of incoming shipments, furnishing such information to the storage and distribution section for preplanning the receipt and storage of the incoming materiel.

- (g) Receives and reviews the edited copies of overseas requisitions returned from zone of interior ports passing on the information to storage and distribution section.
 - (h) Receives and reviews copies of delayed item reports forwarded from zone of interior ports; takes whatever supervisory action is required.
 - (i) Maintains liaison with the theater ordnance officer as to the tactical situation, carefully analyzing each change or proposed change of the situation to determine what supply action is required to support the theater tactical plan.
 - (j) Anticipates the demand for seasonal or special operational items (antifreeze, heaters, cold weather kits, deep water fording kits, amphibious operation requirements) by assuring that special requisitions are placed on the zone of interior in ample time to meet the requirement.
 - (k) Coordinates with maintenance division as to the requirements of the theater rebuild program to insure that required secondary items will be available and that their use in the rebuild program will not prove a detriment to the needs by combat troops.
 - (l) Receives major items status reports, reflecting the total authorized and on hand with troops for each subordinate and army commands of the theater; consolidates this information into totals for the theater.
 - (m) Recommends changes to authorized stock levels when usage factors dictate and increase or decrease of items required to support the theater major items density.
 - (n) Maintains a master stock record system which reflects the status of all ordnance major items authorized in the theater. Maintenance of this system entails the application of all supply documents received from outside sources as generated by the supply branch.
 - (o) Reviews and makes recommendations as to disposition of requests for equipment over and above authorized allowances that are submitted by subordinate or army commands of the theater.
- (2) *Procurement Section.*
- (a) Is responsible for supervising all phases of local procurement of supplies and service for ordnance activities in the ComZ. Insures that all possible sources of local supply and service is exploited to reduce the demands placed on the zone of interior.
 - (b) Purchases supplies, equipment, materiel, and/or services including:
 1. Issuing invitations for and evaluating contract or bids.

2. Negotiating, awarding, executing, and administrating contracts and purchase orders.
3. Analyzing possible sources of supply; locating and listing facilities.
4. Terminating contracts under proper conditions and disposing of inventories.

(3) *Storage and Distribution Section.*

- (a) Is directly charged with the overall supervision of all phases of storage and distribution of Class II and IV supplies in the theater.
- (b) Through careful analysis of theater stock conditions and the prompt dissemination of supply directives, constantly strives for the "Purification" of the supply system by elimination of "bottle necks", excessive "downtime" in requisition channels, and the prompt shipment of excess or obsolete items from the theater.
- (c) Reviews all reports of improper shipments submitted by subordinate or army commands of the theater. Makes recommendations as to the disposition of these reports.
- (d) Obtains and disseminates on a theater wide basis, all technical information relative to the care and preservation of supplies in storage.
- (e) Prepares, for compliance by subordinate commands, a program covering the phases of inspection-in-storage and maintenance-in-storage of general supplies.
- (f) Establishes a uniform inventory plan for use in theater supply depots.
- (g) Receives, analyzes, and makes recommendations as to disposition of requests for additional areas and storage equipment submitted by subordinate commands.
- (h) Makes recommendations as to advisability of opening new ComZ depots or closing of existing facilities.
- (i) Prepares correspondence to follow up on delinquent shipment; maintains file of due-in documents.
- (j) Appraises discrepancies or damages occurring in incoming shipments.
- (k) Reviews, analyzes, and evaluates the availability of stock and determines the propriety and relationship to established levels, plus ascertaining if stock due-in from procurement and other services are properly scheduled and in sufficient volume to maintain authorized levels.

b. Maintenance Branch. This branch is responsible for the overall supervision of ordnance maintenance and inspections in the communications zone. To accomplish this mission, the branch is divided into

three sections; Field Maintenance, Depot Maintenance, and Production Control and Inspection. The duties of these sections are—

(1) *Field Maintenance Section.*

- (a) Maintain liaison with field maintenance units to insure that effective maintenance support is furnished communications zone units.
- (b) Provide technical assistance to all field maintenance units and disseminate technical data as required.
- (c) Provide sufficient field maintenance units to meet existing or future maintenance loads.
- (d) Insuring that approved maintenance and repair practices are followed.
- (e) Direct the modification work order program for field maintenance units.
- (f) Maintains up-to-date policy file of field maintenance activities.

(2) *Depot Maintenance Section.*

- (a) Coordinate and control the rebuild of all ordnance materiel for return to depot stock.
- (b) Develop and recommend policies, methods, and standards of operation for depot maintenance.
- (c) Study and evaluate reports of field expedients and recommend action to be taken.
- (d) Establishes policies for training ordnance maintenance personnel in the communications zone in their particular field.
- (e) Maintains rates of production consistent with established technical standards of quality in performing the rebuild prescribed by the production control and inspection section.
- (f) Maintains staff supervision to insure that shop practices, procedures, and performance of work comply with provisions of technical manuals modification work orders and other directives.

(3) *Production Control and Inspection Section.*

- (a) Interpreting and implementing, if necessary, technical directives, specifications, etc., from higher authorities.
- (b) Planning and establishing production schedules in accordance with priorities established by theater stock control.
- (c) Maintaining continued liaison with the supply branch to insure proper coordination of items to be repaired.
- (d) Consolidate rebuild parts, forecasts, and coordinate production schedules.
- (e) Maintains control records of current maintenance loads.
- (f) Coordinates activities among all sections of the Maintenance Branch in accordance with production schedules.

- (g) Analyzes, develops, and recommends action which will promote maximum productivity consistent with established standards of rebuild.
- (h) Inspects depot maintenance activities as required.
- (i) Establishes maintenance standards for inspection and makes this data available to ordnance inspection teams.
- (j) Receives reports from these teams, consolidates results, and prepares reports for forwarding through command channels to commanders concerned.

6. Explosive Ordnance Disposal and Technical Intelligence

The ordnance section normally contains an explosive ordnance reconnaissance and disposal representative and an ordnance technical intelligence representative. Their functions are discussed in paragraphs 39 through 52.

APPENDIX VI

EFFICIENCY EVALUATION-ORDNANCE UNITS

Section I. PURPOSE AND METHOD

1. General

To furnish the most effective ordnance support to using units, it is necessary that each echelon of support, either supply or maintenance, adhere to approved ordnance doctrine, technique, and procedure. This adherence covers all aspects of the unit operation, from the orderly room through each section of the unit. Accordingly, it becomes the duty of each echelon of command to determine the efficiency of subordinate units through inspection.

2. Evaluation Checklists

Section II contains samples of checklists for the determination of the operating efficiency of an Ordnance Direct Support Company. By use of such checklists, the efficiency of each Ordnance support company within the command can be determined with some degree of accuracy. Allowances must be made for units operating under adverse conditions. For example, the efficiency of a unit operating in the mud would not be as great as one operating under more favorable conditions.

3. Format

This inspection format can be adapted to the inspection of any type of ordnance unit, making necessary changes whenever the format is inadequate or nonapplicable for the unit being inspected.

Section II. SAMPLE ADMINISTRATION AND OPERATIONS CHECKLIST

Part "A"

I. GENERAL

(Inspector check one)

1. *Military Courtesy and Formations.*

YES NO

(Ref: FM 22-5)

- | | | |
|--|-----|-----|
| a. Are guards alert and do they display military bearing?.. | () | () |
| b. Are guards properly posted and do they know general and special orders? (Ref: FM 26-5)..... | () | () |
| c. Do personnel in area salute when required?..... | () | () |
| d. Do personnel report to inspecting officers properly?.... | () | () |
| e. Are retreat and guard mount formations performed properly?..... | () | () |

I. GENERAL—Continued

(Inspector check one)

- | | YES | NO |
|---|-----|-----|
| 2. <i>Housekeeping.</i> (Ref: FM 21-10) | | |
| a. Are latrines clean and sanitary?..... | () | () |
| b. Is unit area free of trash, etc.?..... | () | () |
| c. Are living quarters neat, uniform and clean?..... | () | () |
| d. Are sand buckets, water buckets, and fire extinguishers filled and in strategic locations for fire fighting?..... | () | () |
| 3. <i>TI&E Program.</i> | | |
| a. Is a TI&E conference being conducted as part of the unit training? (Ref: SR 355-20-1)..... | () | () |
| b. Is USAFI information available to all troops? (Ref: SR 355-20-1)..... | () | () |
| c. Is current reading material available to all troops?..... | () | () |
| d. Does the unit have an up-to-date TI&E program bulletin board?..... | () | () |
| 4. <i>Security.</i> | | |
| a. Is a security plan available and up to date?..... | () | () |
| b. Are all personnel acquainted with their part of the security plan, with key personnel being fully acquainted with the complete plan?..... | () | () |
| c. Is a passive air-defense plan posted in a conspicuous place?..... | () | () |
| d. Does unit maintain a current general tactical situation map?..... | () | () |
| 5. <i>Personal Appearance.</i> | | |
| a. Are uniforms neat and properly maintained (if personnel are in working uniforms, this question can best be answered by inspecting clothing in living quarters)?... | () | () |
| b. Are shower or bathing facilities available and being used? (Ref: FM 21-10)..... | () | () |
| c. Are theater, Army or area regulations concerning the authorized uniform being observed?..... | () | () |
| d. Are the accepted standards of personal neatness and cleanliness being observed by the troops of the unit? (Haircuts, shaves, etc.)..... | () | () |
| 6. <i>Morale.</i> | | |
| a. Are recreational and religious facilities available for the use of unit troops?..... | () | () |
| b. Is there a minimum of courts-martial and non-judicial punishment cases?..... | () | () |
| c. Is the venereal disease record low as compared to the theater or army averages?..... | () | () |
| d. Is the Postal Service provided for properly? (Ref: SR 65-220-1 and TM 12-205)..... | () | () |
| 7. <i>Unit Bulletin Board.</i> | | |
| a. Is the bulletin board placed in a conspicuous place?.... | () | () |
| b. Is it kept neat and up to date?..... | () | () |

II. MOTOR TRANSPORTATION (Ref: AR 700-105, TM 9-2810, FM 25-10)

1. *Driver Maintenance.*

- | | | |
|---|-----|-----|
| a. Is first echelon (driver) maintenance properly scheduled and being performed under supervision of motor sergeant?..... | () | () |
|---|-----|-----|

II. MOTOR TRANSPORTATION—Continued

(Inspector check one)

1. Driver Maintenance—Continued

YES NO

- b. Are trip tickets being properly filled out and used? (Ref; DD Form 110 Vehicle and Equipment Operational Record)..... () ()
 - c. Are the following forms and guides in the vehicles and used when appropriate?..... () ()
 - (1) Drivers Report-Accident (SF 91 Operators Report of Motor Vehicle Accident)..... () ()
 - (2) Lubrication Order..... () ()
 - (3) Technical Manual pertinent to vehicle..... () ()
 - (4) Drivers Manual (TM 21-305)..... () ()
 - d. Are drivers thoroughly instructed in driver operation and maintenance?..... () ()
 - e. Do all drivers have a Motor Vehicle Operator's Permit (DD Form 313 U. S. Government Operators Permit)?... () ()
- ### 2. Organizational Maintenance.
- a. Are PM inspections (1,000 and 6,000 mile) being performed as prescribed in TM 9-2810?..... () ()
 - b. Is the PM inspection system on company vehicles tied in with the initial and final inspection system to eliminate duplication of effort?..... () ()
 - c. Is DD Form 460 (Provisional Pass) used properly in scheduling vehicles for preventive maintenance inspections?..... () ()
 - d. Are vehicles deadline and routed to shop when considered unsafe for operation or when continued operation will cause damage?..... () ()
 - e. Are all required forms on hand to properly implement the army system of PM, using to advantage the shop and supply facilities of the company?..... () ()
- ### 3. Dispatching Vehicles.
- a. Is care exercised to insure that the vehicle is suited for the mission for which it is dispatched?..... () ()
 - b. Is dispatching done only by the regularly appointed dispatcher or by an authorized representative?..... () ()
 - c. Does the dispatcher maintain a daily dispatching record of Motor Vehicles?..... () ()
 - d. Does the dispatcher insure that all drivers correctly maintain the trip ticket?..... () ()
 - e. Are vehicles dispatched upon valid requests and are validated trip tickets issued?..... () ()
 - f. Are drivers and assistant drivers assigned to each vehicle?..... () ()
- ### 4. Motor Pool.
- a. Are all TOE equipment and OVM tools for vehicles on hand and properly safeguarded and stored?..... () ()
 - b. Is administrative motor pool located in a suitable dispersed area?..... () ()
 - c. Are adequate facilities and time provided for preventive maintenance by drivers? (Ref: TM 9-2810)..... () ()
 - d. Are fire and safety precautions being observed, such as posting of "NO SMOKING" signs, handling of inflammable materials? (Ref: AR 850-20 and SR 385-155-1)..... () ()

III. FOOD SERVICE

(Inspector check one)

- | | YES | NO |
|---|-----|-----|
| 1. <i>Mess Management.</i> (Ref: TM 10-402) | | |
| a. Has proper site been selected for the kitchen area for drainage, access to water points, convenient distance for men to be served, and at least 300 feet from latrines or any waste disposal point?..... | () | () |
| b. Do the men have a pleasant condition in which to eat their meals, preferably under cover?..... | () | () |
| c. Has a kitchen tent or shack been constructed? This procedure should be followed when time permits and materials are available..... | () | () |
| 2. <i>Equipment.</i> | | |
| a. Has the mess the equipment that is authorized? (Ref: Unit TOE.) If not, has a requisition been submitted and follow up effort taken?..... | () | () |
| b. Is first and second echelon maintenance being performed on stoves and ranges to keep them in working condition? (Ref: TM 10-701)..... | () | () |
| 3. <i>General Sanitation.</i> | | |
| a. Is the general sanitation of the area clean in and around the mess?..... | () | () |
| b. Are screens installed where needed?..... | () | () |
| c. Are garbage cans cleaned and covered?..... | () | () |
| d. Is the cooking equipment washed properly and free of grease?..... | () | () |
| e. Is a sufficient amount of hot water available?..... | () | () |
| 4. <i>Food Preparation and Serving.</i> | | |
| a. Is menu properly made out and posted?..... | () | () |
| b. Is food being prepared according to recipes? (Ref: TM 10-412)..... | () | () |
| c. Is the meal being prepared for the table in such a way that it will appeal to the eye, be tasty, easily digested and furnish nourishment? (Ref: TM 10-405 and TM 10-402)..... | () | () |
| d. Are condiments made available to the men at meal-time?..... | () | () |
| 5. <i>Mess Personnel.</i> | | |
| a. Are mess personnel qualified graduates of cooks and bakers school? If "no" to above, are they qualified by on-the-job training?..... | () | () |
| b. Does the mess have the authorized number of personnel? (Ref: Unit TOE)..... | () | () |
| c. Are personnel in the grade authorized? (Ref: Unit TOE)..... | () | () |
| d. Do mess personnel present a neat, orderly appearance?..... | () | () |
| e. Are mess personnel courteous and considerate during serving of the meal?..... | () | () |
| 6. <i>Records and Forms.</i> | | |
| a. Is head count being performed?..... | () | () |
| b. Are ration requests properly prepared and is a file copy kept?..... | () | () |
| c. Is daily ration summary being kept?..... | () | () |
| d. Are all rations drawn by the mess properly accounted for? (Ref: AR 30-2210 and SR 30-200-1)..... | () | () |

IV. COMPANY SUPPLY

(Inspector check one)

- | | YES | NO |
|--|-----|-----|
| 1. <i>Records.</i> | | |
| Are the following records maintained properly: | | |
| (a) Individual clothing records?..... | () | () |
| (b) Company property book?..... | () | () |
| (c) Voucher files?..... | () | () |
| 2. <i>Storage.</i> | | |
| Is care taken in handling and storage of company property to insure against loss or damage?..... | () | () |
| 3. <i>Security.</i> | | |
| a. Check for and insure protection against unlawful entry into the supply room. Is it adequate and satisfactory?..... | () | () |
| b. Are all serially numbered items listed in the company supply records?..... | () | () |
| 4. <i>Maintenance.</i> | | |
| a. Are small arms free of rust and other forms of deterioration? (Ref: AR 45-80)..... | () | () |
| b. When tactical condition permits, are weapons stored in suitable arms racks?..... | () | () |
| 5. <i>Supply Economy.</i> | | |
| Since supply economy training is as essential as any other type of military training, are the following points observed: | | |
| a. Are supply economy posters prominently displayed in the unit areas?..... | () | () |
| b. Is supply economy stressed in company meetings or training schedules?..... | () | () |
| c. Are key enlisted chiefs indoctrinated with supply economy?..... | () | () |
| d. Do they disseminate this doctrine to their subordinates?..... | () | () |

V. PERSONNEL AND RECORDS

- | | | |
|---|-----|-----|
| 1. <i>Personnel Records.</i> | | |
| a. <i>DA Form 20's</i> (Enlisted Qualification Record): | | |
| Are the Form 20's kept in accordance with current directives? (Ref: AR 640-203)..... | () | () |
| b. <i>DA Form 66's</i> (Officer Qualification Record): | | |
| Are the Form 66's kept in accordance with current directives? (Ref: AR 611-103)..... | () | () |
| c. <i>Service records:</i> | | |
| Are the Service Records and allied papers kept in accordance with current directives? (Ref: SR 615-20-1)..... | () | () |
| d. <i>Immunization register.</i> | | |
| Are the immunization records of the unit up to date?.. | () | () |
| 2. <i>Reports.</i> | | |
| a. <i>Morning reports.</i> | | |
| Are morning reports made out in accordance with SR 335-50-1, SR 335-50-2?..... | () | () |
| b. <i>Individual sick slips.</i> | | |
| Are individual Sick Slips processed in accordance with SR 40-600-5?..... | () | () |

V. PERSONNEL AND RECORDS—Continued

(Inspector check one)

2. Reports—Continued

YES NO

c. Duty roster.

Is the duty roster kept in accordance with SR 220-205-1?..... () ()

d. Company punishment record.

Is a separate sheet kept on every man punished under Article 15 and destroyed when he is transferred? (Ref: MCM 1951)..... () ()

e. Unit mail clerk.

(1) Is locator file kept up to date?..... () ()

(2) Are there adequate facilities for protection of registered mail?..... () ()

3. Filing.

Are unit files in accordance with SR 345-100-1?..... () ()

4. Publications.

Are AR's, SR's, Circulars, etc., kept current? (Ref: AR 310-90)..... () ()

VI. OPERATIONS (directly under the unit commander)

1. Ordnance Technical Assistance Service.

a. Are technical assistance teams organized directly under the unit commander?..... () ()

✓ b. After interrogation, does it appear that the key technical assistance service personnel are fully trained and qualified?..... () ()

✓ c. Since technical assistance service personnel are familiar with initial and final inspection of materiel entering shops do they take customer inspection files (PM indicators) with them on visits or contact?..... () ()

✓ d. Are technical assistance service personnel above average, alert and enthusiastic about selling ordnance service, preventive maintenance, supply economy not only to customers but to other ordnance personnel?..... () ()

Note. If no to this question then the entire activity is unsatisfactory.

✓ e. How many times was technical assistance service furnished to each customer supported during the past 30 days?..... () ()

✓ f. Are additional personnel being trained to replace losses?..... () ()

2. Ordnance Technical Inspections.

✓ a. Is all incoming materiel subject to a complete initial inspection in accordance with the provisions of TM 9-2810 or the pertinent technical manual of the materiel concerned? (Ref: FM 9-10)..... () ()

✓ b. Are active precautions taken to prevent recurring PM deficiencies on materiel of customers?..... () ()

✓ c. In connection with b above are followups made with CO of using unit in instances of vehicle abuse?..... () ()

d. Are all deficiencies that were corrected in the ordnance shop reinspected in the final inspection? (Ref: FM 9-10)..... () ()

VI. OPERATIONS—Continued

(Inspector check one)

| | YES | NO |
|--|-----|-----|
| 3. <i>Density of Materiel Supported.</i> | | |
| ✓ a. Does the unit maintain a current density list of materiel by unit supported?..... | () | () |
| ✓ b. Is the density list broken down by the type of materiel?..... | () | () |
| c. Is the density of materiel used in the requisitioning of supplies?..... | () | () |
| 4. <i>Location of Units Supported.</i> | | |
| ✓ a. Does the unit have a map, properly posted, showing the location of all supported units?..... | () | () |
| ✓ b. Are the necessary additions and deletions made on mission change?..... | () | () |
| 5. <i>Winterization.</i> (Ref: FM 31-70) | | |
| a. Does the unit have a cold injury control NCO?..... | () | () |
| b. Is a stock exchange program in effect?..... | () | () |
| c. Has the unit instructed its personnel in the technique of winter driving?..... | () | () |
| d. Has the unit taken necessary precautions against the weather?..... | () | () |
| 6. <i>Customer Correspondence and Contact.</i> | | |
| ✓ a. Does the unit send new customers a letter advising them of their ordnance support and location and then follow up with personal visit by an officer?..... | () | () |
| ✓ b. Does the Unit Commander make a personal visit to his customers?..... | () | () |
| 7. <i>Wrecker Service.</i> (Ref: FM 9-10) | | |
| a. Are wreckers available on a 24-hour a day basis?..... | () | () |
| b. Do military police know that wrecker service is available from the unit and under what circumstances it is available?..... | () | () |
| c. Is close liaison kept with local military police units?.. | () | () |
| 8. <i>Area Selection.</i> (Ref: FM 9-10) | | |
| ✓ a. Is the unit located in the center of the density of materiel supported as is consistent with existing road net?..... | () | () |
| ✓ b. Are signs posted along main roads and the entrance to the area showing the identification and location of the unit?..... | () | () |
| ✓ c. Are unit and shop areas well marked with neat and properly placed signs?..... | () | () |

Part "B"

Checklist

ADMINISTRATION AND OPERATIONS

(Inspector check one)

I. SHOP GENERAL

YES NO

1. *Appearance and Layout of Shop Area.*

- a. Are the service and supply sections located centrally to offer maximum convenience to all maintenance sections? (Ref: FM 9-10)----- () ()
- b. Was the shop office location chosen with the initial and final inspection section adjacent with the customers convenience in mind?----- () ()
- c. Is sufficient area available to permit separation of materiel depending upon the stage of maintenance and inspection? (Ref: FM 9-10)----- () ()
- d. Does customer supply or organic recovery traffic conflict with operations of any other section?----- () ()
- e. Are shop and supply vehicles properly dispersed throughout area?----- () ()

2. *Security and Safety Precautions.*

- a. Is an adequate security plan set up for shop area and are all personnel familiar with it? (Ref: FM 9-10)--- () ()
- b. Are safety precautions posted and observed? (Ref: FM 9-10)----- () ()
- c. Is fire fighting equipment adequate? (Ref: FM 9-10)--- () ()
- d. Are inflammables properly stored? (Ref: AR 850-20 and FM 9-10)----- () ()
- e. Are metal containers provided for oily rags, trash, etc?.. () ()
- f. Does unit have—
 - (1) A safety officer?----- () ()
 - (2) A safety committee?----- () ()
 - (3) A definite reporting procedure for accidents, or injuries to personnel and equipment?----- () ()
 - (4) "No Smoking" signs in fire hazard areas?----- () ()
 - (5) Frequent safety meetings to brief all personnel on safety procedures?----- () ()

3. *Shop Standing Operating Procedures.*

- a. Is an adequate standing operating procedure adapted to to existing conditions and operations available to all concerned? (Ref: FM 9-10)----- () ()
- b. Are all personnel oriented in overall operation of organization? (Ref: FM 9-10)----- () ()
- c. Are all personnel acquainted with and practicing the SOP? (Ref: FM 9-10)----- () ()
- d. Is provision made, to supply fast moving items direct to various shop sections thru a separate shop supply set up, utilizing form DA 9-79 Parts Requisition? (Ref: FM 9-10)----- () ()
- e. Are provisions made for utilizing indigenous and/or allied personnel to the best advantage?----- () ()
- f. Are proper procedures prescribed and followed to safeguard tools and equipment?----- () ()

I. SHOP GENERAL—Continued

(Inspector check one)

- | | YES | NO |
|--|-----|-----|
| 4. <i>Training.</i> | | |
| a. Is training consistent and concurrent with present operations and mission? (Ref: FM 9-10)..... | () | () |
| b. Are frequent shop foreman and section chief critiques and discussions held with a view of improving the individual proficiency? (Ref: FM 9-10)..... | () | () |
| c. Are personnel encouraged to train in other sections after becoming proficient in one section? (Ref: FM 9-10)... | () | () |
| d. Are provisions made for training indigenous and/or allied personnel in order that they may be utilized in an effective and efficient manner?..... | () | () |

II. SHOP OFFICE

1. *Personnel Qualifications.*
 - a. Are key personnel capable of effective leadership and supervision? (Ref: FM 22-5)..... () ()
 - b. Are key personnel well qualified in their proper MOS? (Ref: FM 9-10)..... () ()
 - c. Are steps being taken to train unqualified personnel? (Ref: FM 9-10)..... () ()
 - d. Are personnel encouraged to become proficient in a secondary MOS? (Ref: FM 9-10)..... () ()
2. *Appearance and Layout.*
 - a. Is the shop office neat and orderly?..... () ()
 - b. Does the layout of shop office permit maximum efficiency of each individual operation?..... () ()
 - c. Has shop office layout taken into consideration the convenience of the customer?..... () ()
3. *Job Order System.*
 - a. Are Form 811's properly completed and distributed? (Ref: FM 9-10)..... () ()
 - b. Are tub files utilized? (Ref: FM 9-10)..... () ()
 - c. Is nose bag system in effect? (Ref: FM 9-10)..... () ()
 - d. Has a maintenance priority system been established? (Ref: SB 9-48)..... () ()
 - e. Is the job order register utilized? (Ref: FM 9-10).... () ()
4. *Jacket Files.*
 - a. Are jacket files maintained on all supported units? (Ref: FM 9-10)..... () ()
 - b. Are jacket file transfers effected promptly to the new supporting maintenance company when mission changes? (Ref: FM 9-10)..... () ()
5. *Supplies, Forms, and Publications.*
 - a. Are adequate current forms maintained for efficient operation of all sections and are standard forms used?.. () ()
 - b. Is the shop office technical library adequate to sustain current mission?..... () ()
 - c. Are publications controlled and yet readily available to shop personnel?..... () ()
 - d. Are duplicate copies of publications of high density items available in the individual sections?..... () ()
 - e. Are sufficient office supplies on hand?..... () ()
 - f. Do mechanics refer to TM's while engaged with their work? (This is a key question, weigh it carefully) (Check inside of TM's—Do they have honest grease smudges and frayed edges on pages?)..... () ()

III. WHEELED VEHICLE SECTION

(Inspector check one)

- | | YES | NO |
|---|-----|-----|
| 1. Personnel Qualifications. | | |
| a. Are key personnel capable of effective leadership and supervision? (Ref: FM 9-10)..... | () | () |
| b. Are key personnel well qualified in their proper MOS?..... | () | () |
| c. Are steps being taken to give on-the-job training to personnel? (Ref: FM 9-10)..... | () | () |
| 2. Appearance and Layout. | | |
| a. Is section laid out to facilitate ease of supervision?..... | () | () |
| b. Are special tools and equipment made readily available to members of the section?..... | () | () |
| c. Is the section area neat in appearance? (Ref: FM9-10)..... | () | () |
| d. Is ordnance materiel in section work areas for repair limited to those currently being repaired?..... | () | () |
| 3. Supervision and Inspection. | | |
| a. Are section chiefs, assistant section chiefs, and crew chiefs constantly supervising and instructing section members? (Ref: FM 9-10)..... | () | () |
| b. Are the proper methods of use, cleaning, storing, and securing special tools, hand tools, and equipment emphasized? (Ref: FM 9-10)..... | () | () |
| c. Are the section chief and assistant section chief aware of the current status of work?..... | () | () |
| d. Do the section chief and assistant section chief know the number of personnel authorized, the number present, and the disposition of the balance?..... | () | () |
| e. Do the supervisory personnel <i>inspect</i> work concurrent with progress?..... | () | () |

IV. TRACK VEHICLE SECTION

- | | | |
|--|-----|-----|
| 1. Personnel Qualifications. | | |
| a. Are key personnel capable of effective leadership and supervision? (Ref: FM 9-10)..... | () | () |
| b. Are key personnel well qualified in their proper MOS?..... | () | () |
| c. Are steps being taken to give on-the-job training to personnel? (Ref: FM 9-10)..... | () | () |
| 2. Appearance and Layout. | | |
| a. Is section laid out to facilitate ease of supervision?..... | () | () |
| b. Are special tools and equipment made readily available to members of the section?..... | () | () |
| c. Is the section area neat in appearance? (Ref: FM9-10)..... | () | () |
| d. Is ordnance materiel in section work areas for repair limited to those currently being repaired?..... | () | () |
| 3. Supervision and Inspection. | | |
| a. Are section chiefs, assistant section chiefs, and crew chiefs constantly supervising and instructing section members? (Ref: FM 9-10)..... | () | () |
| b. Are the proper methods of use, cleaning, storing, and securing special tools, hand tools, and equipment emphasized? (Ref: FM 9-10)..... | () | () |
| c. Are the section chief and assistant section chief aware of the current status of work?..... | () | () |
| d. Do the section chief and assistant section chief know the number of personnel authorized, the number present and the disposition of the balance?..... | () | () |
| e. Do the supervisory personnel <i>inspect</i> work concurrent with progress?..... | () | () |

V. ARTILLERY SECTION

(Inspector check one)

- | | YES | NO |
|---|-----|-----|
| 1. Personnel Qualifications. | | |
| a. Are key personnel capable of effective leadership and supervision? (Ref: FM 9-10)..... | () | () |
| b. Are key personnel well qualified in their proper MOS?..... | () | () |
| c. Are steps being taken to give on-the-job training to personnel? (Ref: FM 9-10)..... | () | () |
| 2. Appearance and Layout. | | |
| a. Is section laid out to facilitate ease of supervision?.... | () | () |
| b. Are special tools and equipment made readily available to members of the section?..... | () | () |
| c. Is the section area neat in appearance? (Ref: FM9-10) | () | () |
| d. Is ordnance materiel in section work areas for repair limited to those currently being repaired?..... | () | () |
| 3. Supervision and Inspection. | | |
| a. Are section chiefs, assistant section chiefs, and crew chiefs constantly supervising and instructing section members? (Ref: FM 9-10)..... | () | () |
| b. Are the proper methods of use, cleaning, storing, and securing special tools, hand tools, and equipment emphasized? (Ref: FM 9-10)..... | () | () |
| c. Are the section chief and assistant section chief aware of the current status of work?..... | () | () |
| d. Do the section chief and assistant section chief know the number of personnel authorized, the number present, and the disposition of the balance?..... | () | () |
| e. Do the supervisory personnel <i>inspect</i> work concurrent with progress?..... | () | () |

VI. SMALL ARMS SECTION

- | | | |
|---|-----|-----|
| 1. Personnel Qualifications. | | |
| a. Are key personnel capable of effective leadership and supervision? (Ref: FM 9-10)..... | () | () |
| b. Are key personnel well qualified in their proper MOS?.. | () | () |
| c. Are steps being taken to give on-the-job training to personnel? (Ref: FM 9-10)..... | () | () |
| 2. Appearance and Layout. | | |
| a. Is section laid out to facilitate ease of supervision?.... | () | () |
| b. Are special tools and equipment made readily available to members of the section?..... | () | () |
| c. Is the section area neat in appearance? (Ref: FM9-10) | () | () |
| d. Are production line methods employed on quantity items?..... | () | () |
| 3. Supervision and Inspection. | | |
| a. Are section chiefs, assistant section chiefs, and crew chiefs constantly supervising and instructing section members? (Ref: FM 9-10)..... | () | () |
| b. Are the proper methods of use, cleaning, storing, and securing special tools, hand tools, and equipment emphasized? (Ref: FM 9-10)..... | () | () |
| c. Are the section chief and assistant section chief aware of the current status of work?..... | () | () |
| d. Do the section chief and assistant section chief know the number of personnel authorized, the number present, and the disposition of the balance?..... | () | () |
| e. Do the supervisory personnel <i>inspect</i> work concurrent with progress?..... | () | () |

VII. INSTRUMENT SECTION

(Inspector check one)

- | | YES | NO |
|---|-----|-----|
| 1. <i>Personnel Qualifications.</i> | | |
| a. Are key personnel capable of effective leadership and supervision? (Ref: FM 9-10)..... | () | () |
| b. Are key personnel well qualified in their proper MOS?.. | () | () |
| c. Are steps being taken to give on-the-job training to personnel? (Ref: FM 9-10)..... | () | () |
| 2. <i>Appearance and Layout.</i> | | |
| a. Is section laid out to facilitate ease of supervision?.... | () | () |
| b. Are special tools and equipment made readily available to members of the section?..... | () | () |
| c. Is the section area neat in appearance? (Ref: FM 9-10)..... | () | () |
| 3. <i>Supervision and Inspection.</i> | | |
| a. Are section chiefs, assistant section chiefs, and crew chiefs constantly supervising and instructing section members? (Ref: FM 9-10)..... | () | () |
| b. Are the proper methods of use, cleaning, storing, and securing special tools, hand tools, and equipment emphasized? (Ref: FM 9-10)..... | () | () |
| c. Are the section chief and assistant section chief aware of the current status of work?..... | () | () |
| d. Do the section chief and assistant section chief know the number of personnel authorized, the number present, and the disposition of the balance?..... | () | () |
| e. Do the supervisory personnel <i>inspect</i> work concurrent with progress?..... | () | () |

VIII. SERVICE SECTION

- | | | |
|---|-----|-----|
| 1. <i>Personnel Qualifications.</i> | | |
| a. Are key personnel capable of effective leadership and supervision? (Ref: FM 9-10)..... | () | () |
| b. Are key personnel well qualified in their proper MOS?.. | () | () |
| c. Are steps being taken to give on-the-job training to personnel? (Ref: FM 9-10)..... | () | () |
| 2. <i>Appearance and Layout.</i> | | |
| a. Is section laid out to facilitate ease of supervision?.... | () | () |
| b. Are special tools and equipment made readily available to members of the section?..... | () | () |
| c. Is the section area neat in appearance? (Ref: FM 9-10)..... | () | () |
| 3. <i>Supervision and Inspection.</i> | | |
| a. Are section chiefs, assistant section chiefs, and crew chiefs constantly supervising and instructing section members? (Ref: FM 9-10)..... | () | () |
| ✓ b. Are the proper methods of use, cleaning, storing, and securing special tools, hand tools, and equipment emphasized? (Ref: FM 9-10)..... | () | () |
| ✓ c. Are the section chief and assistant section chief aware of the current status of work?..... | () | () |
| ✓ d. Do the section chief and assistant section chief know the number of personnel authorized, the number present, and the disposition of the balance?..... | () | () |
| ✓ e. Does the supervisory personnel <i>inspect</i> work concurrent with progress?..... | () | () |

VIII. SERVICE SECTION—Continued

(Inspector check one)

| | YES | NO |
|--|-----|-----|
| 4. <i>Intra-Section Relations.</i> | | |
| a. Are requests for standard item manufacture accepted from any source other than supply section?..... | () | () |
| b. Is close liaison maintained with other sections to facilitate production of common work?..... | () | () |
| c. Does all work performed contribute to accomplishing the unit mission?..... | () | () |

IX. RECOVERY SECTION.

| | | |
|--|-----|-----|
| 1. <i>Personnel Qualifications.</i> | | |
| a. Are key personnel capable of effective leadership and supervision? (Ref: FM 9-10)..... | () | () |
| b. Are key personnel well qualified in their proper MOS?..... | () | () |
| c. Are steps being taken to give on-the-job training to personnel? (Ref: FM 9-10)..... | () | () |
| 2. <i>Appearance and Layout.</i> | | |
| a. Is section laid out to facilitate ease of supervision?..... | () | () |
| b. Are special tools and equipment made readily available to members of the section?..... | () | () |
| c. Is section area neat in appearance? (Ref: FM 9-10)..... | () | () |
| 3. <i>Supervision and Inspection.</i> | | |
| a. Are section chiefs, assistant section chiefs, and crew chiefs constantly supervising and instructing section members? (Ref: FM 9-10)..... | () | () |
| b. Are the proper methods of use, cleaning, storing, and securing special tools, hand tools, and equipment emphasized? (Ref: FM 9-10)..... | () | () |
| c. Are the section chief and assistant section chief aware of the current status of work?..... | () | () |
| d. Do the section chief and assistant section chief know the number of personnel authorized, the number present and the disposition of the balance?..... | () | () |
| e. Do the supervisory personnel inspect work concurrent with progress?..... | () | () |
| 4. <i>Section Operations.</i> | | |
| a. Are adequate provisions made for providing twenty-four hour service?..... | () | () |
| b. Are all personnel familiar with supported unit locations, and area and terrain conditions?..... | () | () |
| c. Are operators of recovery equipment familiar with field rigging, advantage of equipment, etc.?..... | () | () |
| d. Is scheduled preventive maintenance properly performed by crews on schedule?..... | () | () |

Part "C"

Checklist

ADMINISTRATION AND OPERATIONS

I. ADMINISTRATION

(Inspector check one)

1. Supply Office.

YES NO

- a. Does the unit have a complete library for its mission?.. () ()
- b. Does the library indicate usage and proper utilization?.. () ()
- c. Is the office neat, orderly, and adequate?..... () ()
- d. Are customer density figures available for computation of special requirements and editing of requisitions if required and are they current?..... () ()
- e. Is status of customers basic supply loads known? (Ref: Pertinent ORD 7 SNL)..... () ()
- f. Are correspondence files properly maintained?..... () ()
- g. Are daily bulletins, SOP's, depot supply letters, technical and operations memos, etc., complete and properly filed?..... () ()
- h. Are deadline parts, equipment status, and special reports submitted on time and accurately?..... () ()
- i. Is complete information, including stock number, nomenclature, requisition number, quantity, etc. given when initiating followup action on supply matters?.... () ()

2. Security.

- a. Are storage areas or buildings protected against unlawful entry?..... () ()
- b. Are valuable items such as pistols, instruments, spark plugs, etc., under proper safeguard? (Ref: FM 9-10)..... () ()
- c. Are fire and safety precautions being observed?..... () ()
- d. Are classified documents being properly safeguarded? (Ref: AR 380-5)..... () ()

3. Personnel Qualifications.

- a. Are key personnel qualified in assigned MOS's? (Ref: SR 615-25-15)..... () ()
- b. Is on-the-job training effective and being followed? (Ref: FM 9-10)..... () ()
- c. Does supply officer rotate job assignments within the supply section to qualify personnel for secondary MOS?..... () ()
- d. Are steps being taken to train unqualified personnel?.. () ()
- e. Is FM 9-10 being used to instruct personnel in latest techniques of ordnance service?..... () ()
- f. Are key personnel capable of effective leadership and supervision?..... () ()
- g. Do section chief and assistant section chief know disposition of personnel at all times?..... () ()
- h. Is assistant section chief familiar with duties of section chief?..... () ()

4. Appearance and Layout.

- a. Is section laid out to facilitate ease of operation and supervision?..... () ()
- b. Are publications easily available to all persons having occasion to use them?..... () ()

I. ADMINISTRATION—Continued

(Inspector check one)

4. Appearance and Layout—Continued

YES NO

- c. Is there a weak spot or "bottle neck" where paper work processing is being slowed down or held up? (Ref: TM 38-403) (2) () ()

5. Inventory.

- a. Is the cycle inventory system in effect? (Ref: TM 38-403) () ()
- b. Is the cycle inventory system used with a minimum percentage of items checked daily to insure a complete cycle in specified period? (Ref: TM 38-403) () ()
- c. Are items in storage inventoried for location and quantities before being checked against location and quantity on stock card? (Ref: TM 38-403) () ()
- d. Are inventory discrepancies being posted on the cards properly and quickly? (Ref: TM 38-403) () ()

Note. Before evaluating this section, spot check five or more items at random from location to stock card (both bulk and binned items).

6. Lateral Supply.

- a. Is locally available supply information reviewed daily to see if any item might be on hand which can be furnished to remove a vehicle out of commission for parts? () ()
- b. Does the battalion supply section effect lateral supply between the maintenance companies? () ()
- c. Is the unit cooperating with other maintenance companies by releasing an item on hand which will move a piece of equipment from deadline in another unit? () ()

II. STOCK ACCOUNTING

1. Requisitioning Procedure.

- ✓ a. Are outgoing requisitions properly prepared? (Ref: TM 38-403) (2) () ()
- b. Does unit follow requisition schedule published by supporting ordnance depot? () ()
- ✓ c. Is each replenishment stock requisition posted as a due-in to the control card? () ()
- ✓ d. Are any other than stock replenishment requisitions posted to control card? () ()
- ✓ e. Are emergency requisitions posted as due-in on the 3 x 5 due-in card? () ()
- ✓ f. When action or information copy of requisition is returned from depot, is the action, date, and depot voucher number posted in columns provided? () ()
- ✓ g. Are separate requisitions submitted for items not in authorized stockage list? () ()
- h. Are quantities ordered in excess of dues-out on items not in Project 170? () ()
- ✓ i. Does position of sliding signal reflect correct percentage of stock on hand, excess stock, or out of stock if special cardex system is used? () ()
- j. At the end of last requisitioning period, is a line drawn under the last entry on recurring demand column? (Ref: TM 38-403) () ()
- ✓ k. Is the requirement or excess figure accurate? () ()

II. STOCK ACCOUNTING—Continued

(Inspector check one)

1. Requisitioning Procedure—Continued

YES NO

- l. Is the unit requisitioning under new stock numbers as put out by the ordnance supply depot?..... () ()
- m. Are the figures in the on hand, due-in and due-out columns accurate? (Stock Control Card)..... () ()

Note: Check at least 10 cards for accuracy.

2. Posting Procedure.

- a. Is the recurring demand column only utilized for original recurring demands?..... () ()
- b. Are entries made in the recurring demand column when releasing a back ordered item? (Should not be)..... () ()
- c. Do any cards which reflect stock on hand have items due-out? (Ref: TM 38-403)..... () ()
- d. Is location shown on Title Insert if card reflects stock on hand?..... () ()
- e. Are items reflected as "Due-Out" to customers who are no longer supported?..... () ()
- f. Are dues-in canceled or items turned in when stock on hand plus dues-in is more than double the control level?..... () ()
- g. Is only the unfilled balance on customer requisition posted as due-out?..... () ()
- h. Do items manufactured and repaired by service section reflect in demands?..... () ()
- i. Are discrepancies in receipts picked up properly on cards (i. e. quantity actually received posted in receipts column)?..... () ()
- j. Are all stock number changes as reflected on action copies of requisitions received from the field depot posted to the stock cards, to the SNL's, and the stock number changed on the items in stock? NOTE: Check several instances to see if this has been done... () ()

3. Filing Procedure.

- a. Is a voucher register maintained on the standard DA Form 272 (Register of Vouchers to stock record account) or substitute which includes all necessary information? (Ref: TM 38-403)..... () ()
- b. Are all columns of voucher register properly utilized? (Ref: TM 38-403)..... () ()
- c. Are all vouchers filed in folders of not more than one hundred? (Ref: TM 38-403)..... () ()
- d. Are completed vouchers removed from active file and filed numerically in a separate file?..... () ()
- e. Are D/O releases filed with original requisitions?..... () ()

4. Control Levels.

- a. Are the Commanding Officer and Supply Officer familiar with the latest system of computing control levels?..... () ()
- b. Is any consideration given other than normal recurring demand, special missions, seasonal items, or any other circumstances in computing control levels? (Ref: FM 9-10)..... () ()
- c. Are control levels being constantly reviewed by CO and Supply Officer to insure that they are adequate in view of the mission and proposed changes in the mission? (Ref: FM 9-10)..... () ()

II. STOCK ACCOUNTING—Continued

(Inspector check one)

4. Control Levels—Continued

YES NO

- d. Does the supply operation show evidence of proper planning?..... () ()
- e. Is excessive use of special, emergency, and deadline requisitions in evidence? (It is indicative of proper planning to have sufficient parts on hand at the time needed)..... () ()
- f. Does supply officer continually and personally review a portion of his stock cards for accuracy (constant spot check)?..... () ()

III. STORAGE

1. Receiving Procedure.

- a. Are receipts tallied against action copy of requisition to verify quantity received?..... () ()
- b. Are items which are received, checked and Dues-Out cut and segregated for shipment before the remainder is stocked?..... () ()
- c. Are all items processed the same day they are received? (At no time should items which are received two hours prior to normal quitting time be held over to the next day). If this is being practiced, suggestions should be made to speed up receiving process..... () ()

2. Storage Procedure. (Ref: FM 9-10)

- a. Is the area clean, neat, and orderly?..... () ()
- b. Are items not in bins tagged for complete nomenclature and stock number?..... () ()
- c. Are items in storage properly located?..... () ()
- d. Is area plano-graphed for ease of location?..... () ()
- e. Are precautions taken to protect outside storage against the deteriorating elements of sun, rain, freezing, and rusting?..... () ()
- f. Are items in storage properly preserved?..... () ()
- g. Are supplies in bulk storage properly stacked and off the ground?..... () ()
- h. Are bins and drawers properly identified?..... () ()
- i. Do all bins and drawers have parts with proper identifying stock number on at least one item?..... () ()

3. Shipping Procedure. (Ref.: FM 9-10)

- a. Is this area in a separate location with sufficient cover?.. () ()
- b. Within this area, is a separate location maintained for each organization supported?..... () ()
- c. Are papers for each organization kept in a separate jacket or file?..... () ()
- d. Are items delivered to the customer checked against the corresponding Issue Slip of D/O release?..... () ()
- e. Are all new stock numbers reflected on Customer Copy of Issue Slip or D/O Release?..... () ()
- f. Are all items delivered to the customer properly identified and does identification reflect latest number change?..... () ()
- g. Are all methods of transport utilized for delivery and are deliveries made promptly? (At least once daily).. () ()

IV. GENERAL

(Inspector check one)

1. Customer Supply.

YES NO

- a. Are customer requisitions thoroughly edited for completeness of nomenclature, stock number, and proper authority? (Ref: TM 38-403)..... () ()
- b. Are columns, authorized allowances, on hand, due in, unit and quantity requested, properly filled in? (Ref: TM 38-403)..... () ()
- c. Are publications made temporarily available to customers and assistance given in the use thereof when required or requested?..... () ()
- d. Is a current extract of "Dues-Out" kept on each unit supported? (Check three or four vouchers which have been ungraded "B/O" to see if this is being done? (Ref: TM 38-403)..... () ()
- e. Are customers received with a pleasant, courteous attitude which reflects confidence and service?..... () ()
- f. Is there periodic inspection of "Unit Jacket Files" with units responsible officer to determine if all items "D/O" are required?..... () ()
- g. If, when mistakes are found in the preparation of Issue Slips or Turn In Slips, is corrective action taken immediately to instruct personnel, originating document, in the proper use thereof?..... () ()
- h. When customer is no longer supported, is consolidation extract of "Dues-Out" immediately transferred to new supporting ordnance?..... () ()

2. Shop Supply.

- a. Are the efforts of the shop officer and supply officer coordinated?..... () ()
- b. Are numerous checks made with shop officer to determine if items D/O are still required?..... () ()
- c. Are personnel who order and pick up parts kept to a minimum?..... () ()
- d. Is the shop office notified of the latest parts number changes?..... () ()
- e. Are repair kits ordered by the shop instead of assemblies or subassemblies where possible?..... () ()
- f. Is priority given to processing shop requests?..... () ()
- g. Is there an established service stock in the shop area?.... () ()
- h. Does this service stock consist only of fast moving expendable spare parts and supplies, proven by issue experience to have a daily issue frequency? (NOTE: This is a key question, check thoroughly)..... () ()
- i. Are records kept of all issues, receipts, and quantities on hand?..... () ()
- j. Are items carried in service stock constantly being reviewed to insure that unreasonable quantities of repair items are not being immobilized and denied for issue to supported units for deadline equipment?..... () ()
- k. Is an attempt made weekly to replenish service stock, using as the basis the record of parts and supplies expended during the previous week?..... () ()
- l. Is a monthly inventory taken of all items in service stock to verify balances?..... () ()

File
SPC
SPE

IV. GENERAL—Continued

(Inspector check one)

3. *Parts Exchange.*

- | | YES | NO |
|--|-----|-----|
| a. Is parts exchange system in effect?..... | () | () |
| b. Are parts kept in separate locations?..... | () | () |
| c. Is any "Paper Work" required of the customer to exchange any item?..... | () | () |
| d. Is a record kept of all items exchanged?..... | () | () |
| e. Are all items properly identified and preserved?..... | () | () |
| f. Does the supply section assist customer in obtaining items out of stock if not available in exchange section?.. | () | () |
| g. Are items which are exchanges reflected in any way on the Stock Control Card?..... | () | () |
| h. Does the unit make aggressive use of the direct exchange system?..... | () | () |

4. *Salvage and Reclamation.* (Ref: FM 9-10)

- | | | |
|--|-----|-----|
| a. Are returned items properly identified before return to stock?..... | () | () |
| b. Are returned items properly classified for serviceability before return to stock?..... | () | () |
| c. Does service section gear its subassembly repair program to needs as indicated by the supply officer?..... | () | () |
| d. Are repair kits being utilized by the service section to the fullest extent?..... | () | () |
| e. Is service section repairing large quantities of subassemblies which are not in short supply?..... | () | () |
| f. Is all evacuated materiel closely checked for serviceable subassemblies and parts which are in critical short supply?..... | () | () |
| g. Are serviceable subassemblies which are removed from evacuated materiel being replaced by unserviceable subassemblies?..... | () | () |
| h. Is all unserviceable materiel being marked as unserviceable, repairable, or unrepairable, before evacuation?.. | () | () |
| i. Is all ammo being removed from unserviceable materiel being evacuated?..... | () | () |
| j. Are unserviceable items properly carried in unserviceable records?..... | () | () |

5. *Exchange stock.*

- | | | |
|---|-----|-----|
| a. Is unit up to authorized level on exchange stock items?.. | () | () |
| b. Are shortages of exchange stock items on requisition?.. | () | () |
| c. Is the unit operating the exchange stock exchange in accordance with published directives?..... | () | () |
| d. Is unit carrying an exchange stock item for like items being supported indirectly in supported combat units?.. | () | () |
| e. Do the using units have difficulty obtaining items from the exchange stock on an exchange basis?..... | () | () |

APPENDIX VII

CONTENTS OF ORDNANCE OPERATIONS BULLETIN*

1. The elements of information contained in ordnance operations bulletins and their format will change from time to time. The elements of information presented herein are intended for use as a guide only in the preparation of operations bulletins. Following are suggested subjects of the ordnance operations bulletin and are discussed in detail in succeeding paragraphs:

- a. Tactical situation
- b. Location of ordnance
- c. Status of personnel
- d. Task assignments of ordnance units
- e. Ammunition
- f. Maintenance
- g. Supply

2. The subjects listed above are considered to be distinctive rather than restrictive. It is not intended to limit the inclusion of other pertinent information into the ordnance operations bulletin whenever such information will prove of value to the field.

a. *Tactical Situation.*

- (1) Sufficient information of the tactical situation must be given to keep all personnel informed in order to plan requirements of ordnance units and perform assigned missions. Information should be general in nature with only enough detail to provide a clear picture. For example; "_____ Regiment withdrawing and consolidating in vicinity of (Coordinates). _____ Division meeting organized resistance in prepared positions at (Coordinates). Units of _____ Division are advancing along routes from town A to town B meeting very little resistance. _____ Division now in this area with Command Post (Coordinates)." or "The situation for the period was generally quiet. The enemy has withdrawn across the river in vicinity town A (Coordinates). On the remainder of the (unit) front, minor action resulted when small scattered groups of the enemy were contacted by friendly patrols at several points near the perimeter. (N&NW.)"

* Classification Secret.

- (2) The tactical situation is usually furnished by:
 - (a) G-2 Periodic Intelligence Report.
 - (b) G-3 Periodic Operations Report.
 - (c) Conferences with higher headquarters ordnance officer.
 - (d) Information from other ordnance units.
- (3) Additional information of interest affecting operations:
 - (a) Casualties.
 - (b) Prisoners of war.
 - (c) Weather and visibility.
 - (d) Planned future operations.

b. Location of Ordnance Units and Installations.

- (1) Information desired in this paragraph is self-explanatory. When entering into an operation every effort must be made to get ordnance units located and their location published as soon as possible. It is imperative all ordnance units be located by grid coordinates and the surrounding area marked with standard approved ordnance directional signs to clearly identify and locate the unit. All units will be listed daily. All errors or changes will be brought to the attention of the reporting headquarters immediately. Periodically, an overlay showing the location of all ordnance units and major tactical headquarters should be included.
- (2) Periodically this paragraph should publish an organizational chart showing the complete ordnance list of all units in the command. The organizational chart should appear at least once a month.
- (3) Forms for reporting:

| Unit | Location | Arrived |
|------|-----------------------|----------------------------|
| | (grid coordinates) | date, hour, month, year |

Note: All assigned units to be listed and if not present or in transit within the area, an appropriate remark will be made in the arrived column.

c. Status of Personnel.

This paragraph will contain a breakdown of personnel of each unit. The information will be supplied by the personnel officer from the morning reports at 0930 as of 2400 hours the day previous to the report. See example below:

| Unit | OFFICERS AND W. O. | | | | | ENLISTED MEN | | | | |
|---------------------|--------------------|-----|-------|-----|----|--------------|-----|-------|-----|----|
| | Auth | Asg | Atchd | Ab* | PD | Auth | Asg | Atchd | Ab* | PD |
| Hq 00th Ord Gp----- | 18 | 21 | 0 | 4 | 17 | 81 | 76 | 0 | 3 | 73 |
| CIV | | | | | | | | | | |
| Local ROK | | | | | | | | | | |
| 6 155 | | | | | | | | | | |

*Indicates absence due to sickness, DS, TDY, AWOL, Conf, or missing.

Once each month, a roster of all ordnance officers within the command will be published as an annex showing name, ASN, component, date of rank, unit to which assigned, and principal duty. Names will be listed in order of rank.

d. Task Assignments of Ordnance Units.

- (1) The first mission for any ordnance command headquarters, when entering an operation, is to make task assignments. These assignments must list every unit supported by the ordnance command with the map coordinates showing its location. Where location is unknown, the ordnance contact party must aggressively seek and locate the unit.
- (2) Lists of task assignments and changes in task assignments will be covered in this paragraph whenever they occur with a complete recapitulation at least once each month. At that time, a complete list of up-to-date assignments will be published as an annex (see fig. 9). Ordnance units concerned will notify the organizations who are depending upon them for ordnance support with the least possible delay.

e. Ammunition.

- (1) Information in this section should indicate as accurately as possible the quantity by tonnage and location of ammunition within the command area. The following form is recommended:

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---------------------|----------------------|---------------------------------|-----------------|-----------------------|-------------------------|------------------------|---------------------------|
| <i>Installation</i> | <i>Grid Location</i> | <i>On Hand Beginning Period</i> | <i>Received</i> | <i>Issued US Army</i> | <i>Issued All Other</i> | <i>Tonnage Shipped</i> | <i>On Hand End Period</i> |

Depot #

ASP #

- (2) Indicate whether or not depot or ASP is Army, Navy, Marine, Air Force, or combination.
- (3) Location will be by grid coordinates.
- (4) On hand at beginning of period should coincide with on hand at end of previous reporting period. Discrepancies should be explained by notes.
- (5) Ammunition received from any source, i. e., ZI, CZ, and/or recovered, turn-in by units, is picked up as received in column 4. Recovered and turn-in by units is not entered unless it is serviceable and suitable for issue.
- (6) The issued column will be restricted to accounting for ammunition issued to troop units. Column 5 will account for the ammunition issued to U. S. Army units only: Column 6 will account for the ammunition issued to all others.¹ It will not be used to denote transfers from

¹ Includes U. S. Navy, U. S. Marines, U. S. Air Force, and all other allied troops.

TASK ASSIGNMENT OF ORDNANCE UNITS

| Ord Unit | Location | Unit supported | Location |
|------------------|-------------|------------------------------|----------|
| 100th Ord DS.... | CD-1579.... | 700th Div Ord Bn..... | CD-1980 |
| | | 66th Armored FA Bn..... | CD-1985 |
| | | 36th Engineer Combat Bn..... | CD-1876 |
| | | etc. | |
| 50th Ord DAS.... | CE-1644.... | 47th Trans Trk Co..... | CE-1642 |
| | | 63d Trans Trk Co..... | CE-1643 |
| | | Hq Co X Corps..... | CE-1545 |
| | | etc. | |
| 82d Ord HS..... | CF-1811.... | 50th Ord DAS..... | CE-1644 |
| | | 60th Ord DAS..... | CE-1595 |
| | | etc. | |

or

Heavy support of all ¼-ton 4 x 4
and 2½-ton 6 x 6 trucks.

Note. Sufficient description of all missions should be shown to enable all concerned to compute loads and densities of materiel.

Figure 9. Sample form—task assignment of ordnance units.

depots to ASP's or vice versa. These will be shown in column 7.

- (7) Quantities recorded in column 8 will agree with reports submitted to higher headquarters. This quantity should be the same as that which is entered as "on hand at the beginning of period" for the subsequent report, unless there is a necessity for inventory adjustment, in which case such adjustment must be noted. Ammunition in transit will be shown as in transit until received.

DAILY AMMUNITION STATUS REPORT

| 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------|------------------|--|----------------------|-------------------|----------------------|
| Type | Number supported | Day of supply (rds per weapon per day) | Available per weapon | Authorized level* | Total rounds on hand |
| 60 mm..... | 1, 600 | 10 | 20 | 640, 000 | 1, 280, 000 |
| 81 mm..... | 800 | 20 | 30 | 640, 000 | 960, 000 |
| 4.2 in..... | 300 | 20 | 10 | 240, 000 | 120, 000 |
| 105 mm how..... | 900 | 35 | 40 | 1, 260, 000 | 1, 440, 000 |
| 155 mm how..... | | | | | |
| 155 mm gun..... | | | | | |
| 8 in how..... | | | | | |
| 90 mm gun..... | | | | | |
| 76 mm gun..... | | | | | |
| Etc..... | | | | | |

* Assume a 40 day level of supply

Col 6

Col 4 = Col 2 X Days of Supply

Figure 10. Sample form—daily ammunition status report.

- (8) A current ammunition status report will be published daily. Copy of pertinent report should be included as an annex to the Ordnance Operations Bulletin. This report will show the available rate or rounds per weapon, the required rate of rounds per weapon, the total number of weapons by type, the authorized stock level, and the total number of rounds on hand. For sample form, see figure 10.
- (9) Periodically, an annex will be published to the Ordnance Operations Bulletin giving an inventory of captured enemy ammunition on hand. It will indicate the type of ammunition, its condition and location.

✓ f. *Maintenance.*

- (1) Ordnance Maintenance Shop Production by Units.

Note. This paragraph should clearly show the quantity of ordnance equipment processed, salvaged, evacuated (and to whom), and on hand during a given period. See sample form below:

| Item | On hand beginning period | Received | Repaired | Salvaged | Evacuated | Backlog to be evacuated | On hand end period |
|-------------|--------------------------------|----------|----------|----------|-----------|-------------------------------|-----------------------|
| Veh GP | 11,616 | | | | | | |
| Veh SP | 4,16 | | | | | | |
| Veh Track | 2,16 | | | | | | |
| Tank | 6,16 | | | | | | |
| Artillery | 6,16 | | | | | | |
| Small Arms | | | | | | | |
| Instruments | | | | | | | |

- (2) This information will be consolidated for the entire command. Monthly, an annex will be prepared showing the total activity by company for the period.
 - (3) On hand at end of period will coincide with on hand at beginning of period for the subsequent report.
 - (4) Ordnance scrap materials as a result of salvage operations on hand in maintenance units. This will be given in estimated short tons for both U. S. and enemy equipment.
- Note.* Periodically show number of short tons turned in to Quartermaster salvage dump or depot.
- (5) As requirements dictate, a status of critical major combinations report will be published as an annex to the Ordnance Operations Bulletin. A sample form for this purpose is shown in figure 11.
 - (6) Enter all information not covered above, unless it is too lengthy and requires to be included as an annex, such as:
 - (a) Discussions, problems, recommendations, and accomplishments of ordnance maintenance contact parties.
 - (b) Accomplishments of individual ordnance units.
 - (c) Problems hampering the efficiency of ordnance units.

STATUS OF CRITICAL MAJOR COMBINATIONS AS OF 1800 HOURS 13 DECEMBER 19

| | With troops | | Army 15 day reserve | | | Troop losses | | | | | Quantity allocated month of December not yet received | |
|---|--------------|---------|---------------------|------------|--------------|--|-------------------------------|-------------|-------------------------------|---------------------|---|-----|
| | Author- ized | On hand | Author- ized* | On hand | | Unserviced, will be re- paired in 30 hours | Losses De- cember 1st to date | | In 4th echelon shops | | | |
| | | | | Serv- iced | Unserv- iced | | Total | Recover- ed | Estimated recovery in 15 days | Deadlined for parts | | |
| TANK, medium----- | 438 | (463) | 52 | (51) | (13) | (64) | (0) | (13) | (0) | (24) | (26) | (0) |
| M4 & M4A1----- | ----- | 337 | ----- | 33 | 9 | 42 | (0) | 12 | 0 | 22 | 25 | 0 |
| M4A3, w/76mm Gun----- | ----- | 126 | ----- | 18 | 4 | 22 | (0) | 1 | 0 | 2 | 1 | 0 |
| (1st Ad has 10 ea M4 w/dozer in lieu of light tanks; 2nd Armd Gp has 3 ea M4 in lieu of light tanks; 5 ea M4 in div reserve; 8 ea M4 w/rocket launcher being used f/experimental purposes; 751 Tk Bn short 1 ea M4 w/dozer until available; 150 ea M4A3's w/76mm Gun being shipped from U. S. to replace M4's. No info rec'd on date of arrival.) | | | | | | | | | | | | |
| TANK, medium, M4A3, w/105 mm | | | | | | | | | | | | |
| Howitzer----- | 57 | 14 | 1 | 15 | 10 | 25 | (5) | 1 | 1 | 1 | 0 | 9 |
| (34 ea Carr, mtr 105mm How M7 and 9 ea Carr, Mtr 75mm How M8 used as sub; 14 ea M4A3's in process of delivery in exchange for 14 ea sub items.) | | | | | | | | | | | | |
| TANK, light, M5 and M5A1----- | 165 | 138 | 11 | 22 | 11 | 33 | (0) | 2 | 0 | 1 | 20 | 12 |
| (1st AD short 2 ea undesired and has 10 ea medium tanks w/dozer as sub; 760 Tk Bn short 12 ea turned in VOCC, 5th Army 2nd Armd Gp has 3 ea medium tanks as sub; 757 Tk Bn short 1 ea undesired; 1 ea used as sub f/Vehicle, Tk Rec light.) | | | | | | | | | | | | |
| * | * | * | * | * | * | * | * | * | * | * | * | * |

Note. B. E. F. figures are included in this report. 758th Tank Battalion (lt) is not included in this report as this unit is still drawing equipment from Peninsular Base Section. *Authorized reserve is based on current totals in hands of troops and therefore will not necessarily agree with figures published in MTOUSA monthly allocation, which are based on Status Report as of a previous date.

Figure 11. Sample form-status of critical major combinations.

- (d) Problems which reduce the operating efficiency of technical and tactical units involving ordnance maintenance support.
- (e) Unusual conditions which reduce the longevity of ordnance materiel and equipment, such as:
1. That which has been received from the zone of interior, or adjacent theater of operations, in an unsatisfactory or unserviceable condition.
 2. Excessive wearing or burring of parts not due to misuse or carelessness on the part of the using organization.
 3. Effects of weather or atmospheric changes on equipment or cleaning and preserving materiel.
 4. Suggestions or recommendations to improve ordnance maintenance and supply services for any or all the arms and services. Inclose a copy of each drawing, photograph, sketch, model, blueprint, or any other media used to explain the problem and recommended corrective action. If the suggestion is made by a member of one of the using arms or services, give full particulars.

g. Supply.

- (1) Receipts:
- | | <i>X Depot</i>
<i>USA Other</i> | <i>Y Depot</i>
<i>USA Other</i> | <i>Z Depot</i>
<i>USA Other</i> |
|-------------------|------------------------------------|------------------------------------|------------------------------------|
| Line Items..... | Quantity | Quantity | Quantity |
| Approx. Tons..... | Quantity | Quantity | Quantity |
- (2) Issues:
- | | <i>X Depot</i>
<i>USA Other</i> | <i>Y Depot</i>
<i>USA Other</i> | <i>Z Depot</i>
<i>USA Other</i> |
|-------------------|------------------------------------|------------------------------------|------------------------------------|
| Line Items..... | Quantity | Quantity | Quantity |
| Approx. Tons..... | Quantity | Quantity | Quantity |
- (3) List of ten (10) most critical items of ordnance general supplies: (such as repair parts, unit assemblies, accessories).

SAMPLE FORM:

| <i>Item</i> | <i>Due In</i> | <i>Due Out</i> |
|---------------------------------------|---------------|----------------|
| Nomenclature (with stock number)..... | Quantity | Quantity |

- (4) List of items of ordnance general supplies obtained through local purchase will be noted in this paragraph.

| <i>Item</i> | <i>Quantity</i> | <i>Value</i> |
|-------------|-----------------|--------------|
|-------------|-----------------|--------------|

Miscellaneous Supply Matters

- (5) A complete review of all critical repair parts (parts with availability less than demand) will be made every 15 days in combat, otherwise once monthly. By dividing this review into 15 equal increments, this task is reduced to a minimum. A sample of such a daily increment is shown in figure 12.

- (6) Types of information not covered in above paragraphs will be noted here. Results, problems, and recommendations gathered from supply contact parties, staff meetings, and communications from higher headquarters, if not too lengthy, will be included. Where information about one specific subject or contact party covers more than one typewritten page, it may be inclosed as an annex.

HEADQUARTERS 5TH ORDNANCE BATTALION

APO 464

10TH ARMY ORDNANCE DEPOT

SNL GROUP G-501

TRUCK, 2½ TON, 6 x 6, AMPHIBIAN (GMC DUKW)

Period Covered Nov 12, 1944, 1800, to Nov 27, 1944, 1800

| Piece mark | Item | Present stock balance | Received from CZ last 30 days | Dues | |
|--------------------------------------|--|-----------------------------|-------------------------------------|------|-----|
| | | | | In | Out |
| <u>GROUP 01</u> <u>ENGINE</u> | | | | | |
| SN-3229 | ENGINE, Complete, assy (GMC type 270). | 0 | 3 | 40 | 30 |
| <u>GROUP 04</u> <u>EXHAUST</u> | | | | | |
| 2179967 | PIPE, muffler tail, assy | 0 | 7 | 180 | 150 |
| 218971 | PIPE, muffler tail | 0 | 0 | 110 | 100 |
| 218970 | PIPE, bulkhead to muffler exhaust assy. | 0 | 0 | 110 | 100 |
| <u>GROUP 05</u> <u>COOLING</u> | | | | | |
| 083429 | HOSE, radiator outlet pipe | 6 | 76 | 120 | 90 |
| <u>GROUP 06</u> <u>ELECTRICAL</u> | | | | | |
| 216633 | BUTTON, horn assy | 0 | 0 | 184 | 164 |

Figure 12. Sample critical repair parts review.

h. Explosive Disposal. Report all explosive disposal matters in this paragraph including a recapitulation of all work completed.

i. Technical Intelligence. Enter all matters relating to this subject in this paragraph, unless they require a lengthy report; a special annex may be used.

3. Distribution of the operations bulletin is determined by the commanding officer of the unit initiating it but should include as a minimum the following:

a. Chief of Ordnance.

b. Theater Ordnance Officer.

c. Ordnance Officer, Army Field Forces.

d. Army Ordnance Officer.

e. Ordnance Officer, all logistical commands in support of operations.

f. Ordnance Officers, all corps and divisions within the major command.

g. Commanding Officers, all ordnance groups, battalions and companies within the major command.

APPENDIX VIII

GLOSSARY OF ORDNANCE TERMS

Allocation—1. Apportionment of a definite quantity of supplies, space, services, personnel, or productive facility for a specific use. 2. An authorization by the Comptroller of the Army, making funds available within a prescribed amount to an operating agency for the purpose of issuing allotments. 3. Act of obligating, earmarking, or reserving a definite quantity of ammunition at a specified ammunition supply installation for a designated organization.

Allocation of credit—See Ammunition Credit.

Ammunition available supply rate—That quantity of ammunition expressed in rounds per weapon, per day for ammunition items fired from weapons, and in terms of units of measure per organization or unit per day for bulk allotment items, that can be sustained within available supplies. It is applied only to the weapons of divisions and separate units of Armored, Infantry, Combat Engineers, Artillery, and Chemical Mortar Battalions. The weapons of non-divisional service support units are excluded unless unusual circumstances necessitate their employment in a combat role.

Ammunition credit—Authority given an organization to draw a specified quantity of ammunition during a given period for a particular use. Ammunition credits are not used in a combat zone below Army level.

Ammunition day of supply—A day of supply consists of the estimated quantity of ammunition required per day per weapon to sustain operations in an active theater. It is used by the Department of the Army and by the theater commander in establishing theater stock levels. The basis is applied to all weapons authorized to be in the hands of troops in the theater, beginning with arrival in the theater. The day of supply is frequently multiplied and used to express the estimated ammunition requirement by theater, by base, or by tactical unit (army, army group, or similar unit). Quantities so derived will sustain a balanced force of not less than 150,000. It may require augmentation or reduction if applied to a smaller force or greatly increased one. Except as a basis of establishing ammunition requirements for such units, the term "day of supply" has no application to tactical units in the combat zone (such as division, corps, etc.).

Ammunition lots—A particular quantity of ammunition from one manufacturer. A code number identifying each lot is assigned when it is manufactured.

Ammunition required supply rate—The amount of ammunition expressed in terms of rounds per weapon per day for ammunition items fired by weapons, and in terms of units of measure per day for bulk allotment ammunition items estimated to be required to sustain operations of any designated force without restriction for a specified time. Tactical commanders use this rate to state their requirements for ammunition to support planned tactical operations at specific intervals. It is submitted through command channels and is consolidated at each echelon. It is considered by each commander in determining the available supply rate within his command.

Auxiliary Labor—Labor employed to augment existing manpower and enhance its capabilities. Auxiliary labor includes indigenous labor, prisoners of war, and manpower from any source outside of and above the United States military ceiling, such as foreign military and quasi-military service troops under United States command and control.

Ballistics—Science of the motion and behavior characteristics of missiles, i. e., projectiles, bombs, rockets, etc., and of terminal ballistics accompanying phenomena. (Includes interior and exterior ballistics.) See SR 320-5-1 for further details.

Ballistics and technical service—Service performed in measuring muzzle velocity of all artillery weapons requiring such service; calibration of all types of artillery weapons for maximum effectiveness; rendering technical advice relative to the accuracy, life of gun and howitzer tubes, and recommending replacement when required; and rendering technical advice on ammunition lots and determining their ballistic correctness.

Basic load—The amount of ammunition expressed in rounds by type which can be carried by a unit in its organic transportation, provided by tables of organization and equipment. It is a fixed amount of ammunition established by the Department of the Army concurrently with publications or changes in tables of organization and equipment. It is expressed in rounds by caliber, but percentages by type are left to the discretion of the unit commander (in general, percentages used in day of supply should be followed). It includes the resupply load.

Calibration—1. Determining the corrections for a gun by firing. Calibration is used to bring the center of impact or burst of a gun to a predetermined point which makes a definite pattern with the center of burst or impact of the other guns of the same battery.
2. Measurement of wear in the bore of a gun in order to correct

for the difference of muzzle velocity between it and the other guns of a battery. 3. Determination of the corrections to be made in the reading of instruments used in precise measuring.

Cannibalization—The uncontrolled removal of components from one assembly or piece of equipment for use on another. The unserviceable item, which was replaced by the component so removed, is discarded or placed in supply channels without recording the action taken and without regard as to possible value of unserviceable parts.

Central stock control agency—Maintains records which are the basis for procurement, requisitioning, distribution of incoming supplies, redistribution of unbalanced stocks, determination and disposal of supplies, disposition of obsolete items, coordination of rebuild and repair operations with supply demands, and revision or determination of replacement and maintenance factors.

Chemical ammunition—That ammunition, the filler of which is a toxic gas, a smoke, or an incendiary agent. Chemical ammunition is usually procured by the Chemical Corps of the Army primarily for use by the Army. In a theater of operations, ordnance ammunition service may store and issue nontoxic types of chemical ammunition, toxic filled shells, and bulk toxics when appropriate service troops of the Chemical Corps are not available or when directed by the theater commander; however, responsibility for the procurement and surveillance of bulk toxic and chemical filled toxics rests with the Chemical Corps.

Common item of ordnance—Piece of Army ordnance equipment or materiel which is used by more than one service.

Depot support—That support mission which provides the reserve of supply and supply potential which is required to insure an uninterrupted flow of supplies into the combat zone. This support mission is provided by fixed type units operating in the communications zone or zone of interior.

Direct exchange—A system of supply by which organizations exchange with field maintenance units an unserviceable part, sub-assembly or assembly for a serviceable like item. The unserviceable item may be repaired and returned to stock, salvaged, or evacuated to a higher echelon of repair.

Direct support—1. That support mission requiring one unit to support another specific unit and authorizing it to answer directly the supported units requests for assistance. 2. Normally considered third echelon support furnished to using organizations.

Echelons of maintenance—See maintenance categories.

Echelons of supply—See supply categories.

Evacuation—Process of clearing personnel, animals, or materiel from a given locality and transferring them to another area.

Exchange stock—That quantity of stock authorized to field maintenance units for exchange purposes. This stock is further delineated and defined as follows:

Direct exchange stock—A selected list of Ordnance expendable supplies, which have been designated by the Chief of Ordnance as repairable and/or recoverable, such as starting motors, generators, carburetors, fuel pumps, and other selected items, maintained for direct exchange purposes.

Major item exchange stock—That quantity of major items, authorized by commanders having responsibility for field maintenance, over and above TOE or TA allowances to be used for replacing like items in the hands of using units which cannot be repaired within a reasonable length of time. Formerly known as utility stock or maintenance float.

Explosive ordnance—Items containing an explosive together with an explosive train designed to detonate upon the completion of a predetermined series of events such as impact, time influence, and disturbance. Land explosive ordnance includes bombs, artillery, shells, mortar shells, rocket projectiles, guided missiles, atomic weapons, land mines, demolition charges, booby traps, and all similar items or components. Underwater explosive ordnance items, normally a responsibility of the Navy, include all items designed to function under water such as mines, torpedoes, and depth charges.

Explosive ordnance disposal service—That service which has as its mission the detection, recovery, and disposal of explosive ordnance items which may cause injury or loss of life to personnel or destruction of property.

Field maintenance—See maintenance category.

Heavy support—That support mission normally provided by heavy maintenance companies, supply depot companies, artillery and vehicle parks, and reclamation and classification companies which, due to their reduced mobility, can perform a more complete maintenance and supply function. Materiel evacuated by units in direct support roles to heavy support units is not returned through maintenance channels but is repaired and placed in supply channels.

Indigenous labor—Labor which is native to a particular geographical area or country. Such labor is sometimes referred to as local labor.

Lateral supply—A method of transferring supplies from one unit to another unit by authority of the ordnance officer of the command and accomplished by use of approved transfer documents.

Maintenance—Work performed to prevent deterioration or to correct defects. It may involve servicing, repair, renovation or rebuild, or a combination of those services.

Major command—The term "major command" as used herein, includes continental armies, the Military District of Washington, and over-

sea army commands directly under the Department of the Army. Where applicable, ordnance service within other separate field commands is the same as within major commands.

Maintenance categories—System of maintenance based on difficulty and requisite technical skill, in which jobs are allocated to organizations in accordance with the availability of personnel, tools, supplies, and time within the organization. Following are the maintenance categories:

1. *Organizational maintenance*—That maintenance authorized for, performed by, and the responsibility of, a using unit on its own equipment. This maintenance normally consists of inspecting, cleaning, servicing, preserving, lubricating, and adjusting as required, and also may consist of minor parts replacement not requiring highly technical skills. In the Army Establishment organizational maintenance incorporates the first and second echelons as follows:

- a. *First echelon*—That degree of maintenance performed by the user, wearer, or operator of equipment, in providing the proper care, use, operation, cleaning, preservation, lubrication, and such adjustment, minor repair, testing, and parts replacement as may be prescribed by pertinent technical publications and tool and parts lists.

- b. *Second echelon*—That degree of maintenance performed by specially trained personnel provided for that purpose in the using organization. Appropriate publications authorize the second echelon of maintenance additional tools and the necessary parts, supplies, test equipment, and skilled personnel to perform maintenance beyond the capabilities and facilities of the first echelon.

2. *Field maintenance*.—Field maintenance is that maintenance authorized and performed by designated maintenance activities in direct support of using organization(s). This category normally will be limited to maintenance consisting of replacement of unserviceable parts, subassemblies, or assemblies. In the Army Establishment, field maintenance usually incorporates the third and fourth echelons as follows:

- a. *Third echelon*.—That degree of maintenance authorized by appropriate technical publications to be performed by specially trained units in direct support of using organizations. Customarily, a third echelon unit provides maintenance support to a number of using organizations. Third echelon maintenance is authorized a larger assortment of parts, subassemblies, and assemblies, and more precise tools and test equipment than is provided to using organizations. Third echelon organizations repair sub-

assemblies and assemblies and repair the overflow from the lower echelons within limits imposed by specified authorizations of tools, parts and test equipment. They also support the lower echelons by providing technical assistance and mobile repair crews and repair parts when necessary.

b. Fourth echelon.—That degree of maintenance authorized by appropriate technical publications to be performed by units organized as semifixed or permanent shops to serve lower echelon maintenance within a geographical area. Fourth echelon maintenance is authorized a larger assortment of parts, subassemblies, and assemblies, and additional and more precise tools and test equipment than the lower echelons. It may furnish mobile repair crews or reinforcing elements to lower echelons when required. The principal function of fourth echelon maintenance is to repair subassemblies, assemblies, and major items for return to the supply channels.

*3. Depot maintenance—**a. General.* That maintenance required for the repair of materiel which requires a major overhaul or complete rebuild of parts, subassemblies, assemblies, and/or the end item. Such maintenance is intended to augment stocks of serviceable equipment or to support lower levels of maintenance by the use of more extensive shop equipment and personnel of higher technical skill than are available in organizational or field maintenance activities. In the Army Establishment this category embraces the fifth echelon which is the highest echelon of maintenance.

b. Fifth echelon.—That degree of maintenance authorized for rebuilding major items, assemblies, parts, accessories, tools, and test equipment. It normally supports supply on a rebuild and return to stock basis. Fifth echelon operations are scheduled so as to employ production line and assembly line methods whenever practicable.

Major item—An article of materiel which, in the opinion of the technical service or agency charged with its procurement, is of sufficient importance to require individual classification and documentation.

Mission item—Item or group of items specifically required for the complete accomplishment of a mission. Ordnance tools and tool and shop sets are examples of mission items.

Mobility—The quality or state of being mobile; capacity or facility of movement.

- Modification*—A major or minor change in design or assembly of an item of materiel.
- Operating level*—Quantity of supply required to support an organization or unit for a given period of time.
- Order and shipping time*—Time which will elapse under normal circumstances between the date a requisition is submitted until the supplies are physically received. This time will vary according to method of transportation in use and distance involved in shipment.
- Ordnance ammunition*—Ammunition procured by the Ordnance Corps of the Army primarily for use by the army. In ordnance ammunition the filler is primarily an explosive or an explosive is used in the chain of events, such as in pyrotechnics.
- Ordnance general supplies*—Include all ordnance supplies, with the exception of ammunition, required for the maintenance of an organization, (see *supplies* for classes of supplies).
- Ordnance service*—All supply and maintenance activities necessary to maintain the ordnance equipment of a command in usable condition and such other equipment as directed by proper authority.
- Ordnance service in the field*—That part of the responsibility of the Ordnance Corps which is discharged by the ordnance staffs of field commanders and by ordnance troop units.
- Ordnance technical intelligence service*—That service the purpose of which is to collect, collate, and evaluate information pertaining to foreign materiel and supporting installations, and to disseminate the resultant intelligence.
- Organizational maintenance*—See maintenance category.
- Reclamation*—Process of restoring to usefulness condemned, disregarded, abandoned, or damaged materiel, or parts or components thereof, by repair, refrabrication, or renovation, and returning such items to supply channels.
- Recoverable items*—An article considered by the cognizant technical service to be worth being repaired and used again.
- Recovery*—Act of bringing back damaged material to be repaired and used again.
- Regulated item*—Item which is controlled by the chief of a technical service.
- Renovation*—1. Process of restoring materiel to, or nearly to, its original condition by cleaning, painting, or similar methods. 2. Restoration of ammunition to serviceable condition by operations more extensive or hazardous than reconditioning, normally by the replacement of components.
- Responsibility*—1. Obligation to carry forward an assigned task to a successful conclusion. With responsibility goes authority to direct and take the necessary action to insure success. 2. Obligation of

an individual for the proper custody, care, and safekeeping of property or funds entrusted to his possession or under his supervision; it includes a pecuniary liability for any loss which might occur because of failure to exercise this obligation.

Required supply rate—See Ammunition required supply rate.

Requisitioning objective—The maximum quantities of materiel to be maintained on hand and on order to sustain current operations. It consists of the sum of stocks represented by the operating level, safety level, and the order and shipping time/procurement lead time as appropriate.

Safety level—That quantity, in addition to the operating level, of materiel required to permit sustained operations in the event of minor interruption of normal replenishment or unpredictable fluctuations in supply demand. The time factor is based on the least amount of time necessary for emergency replenishment by the supply unit.

Standing operating procedure—A set of instructions giving the methods to be followed by a particular unit for the performance of those features of operation, both tactical and administrative which the commander desires to make routine.

Stockage objective—The maximum quantities of materiel required to be on hand in order to sustain *current operations*. It will consist of the sum of stocks represented by the operating level and the safety level.

Supplies—All items necessary for the equipment, maintenance, and operation of a military command, including food, clothing, equipment, arms, ammunition, fuel, forage, materials, and machinery of all kinds.

Class I—those articles which are consumed by personnel or animals at an approximately uniform rate irrespective of local changes in combat or terrain conditions. Examples: rations and forage.

Class II—supplies and equipment for which allowances are established by tables of organization and equipment, tables of allowances, tables of basic allowances, tables of equipment, equipment modification lists, and other lists or letters which prescribe specific allowances for a unit or for an individual. Examples: clothing, weapons, and mechanics' tools.

Class III—fuels and lubricants for all purposes, except operating aircraft or for use in weapons such as flame throwers. Examples: petroleum products such as gasoline, kerosene, diesel oil, fuel oil, lubricating oil, and greases; and solid fuels such as coal, coke, and wood.

Class IV—supplies and equipment, except Air Force supplies, for which allowances are not prescribed or which are not otherwise classified.

Class V—ammunition explosives, and chemical agents (except Air Force Class VA supplies).

Class VA—ammunition used exclusively by the Air Force, examples: bombs, Air Force dropped mines, and aircraft rockets.

Supply—Procurement, distribution, maintenance, and salvage of supplies. In army usage includes determination of kind and quantity of supplies.

Supply categories—1. Organizational supply is that service authorized for and performed by a using organization with respect to its own equipment. It is a command responsibility of the using unit commander. Organizational supply includes any action taken by the using unit commander and all personnel within his unit to obtain initial or replacement issue of authorized end items, parts, tools, equipment, and supplies. After initial issue of supplies and equipment, organizational supply normally consists of—obtaining replacement of end items lost in combat or from other causes; obtaining replacement of unserviceable recoverable items, beyond the limits of economical repair in organizational maintenance, through the medium of direct exchange with the supporting supply unit; obtaining replenishment of authorized stockage of repair parts and supplies consumed within the using organization in its supply and maintenance mission. This category incorporates the first and second echelons of supply as follows:

a. First Echelon supply is that phase of supply performed by the individual user, wearer, or operator in the acquisition of supplies and equipment from the unit supply.

b. Second Echelon supply is that phase of supply performed by specially trained and designated personnel of the using organization in the acquisition, distribution, and accounting for authorized initial, replacement, and replenishment supplies and equipment at the organizational level.

2. Field supply is that service authorized and prescribed to be performed by designated mobile, semimobile, and fixed technical service organizations and/or installations in providing initial, replacement, and replenishment supply support to using units and to collateral field maintenance activities. The performance of field supply at Class I and II installations in the continental United States is a command responsibility of continental army commanders and the Commanding General, Military District of Washington within their respective areas, except for that pertaining to administrative supplies and plant operating equipment at Class II installa-

tions or activities engaged in manufacturing, research, development, and testing, which is the responsibility of the chief of technical service commanding the installation or activity. In oversea commands performance of field supply is a command responsibility of theater army commanders, communications zone commanders, field army commanders and, where applicable, lesser included field commands. This category incorporates the third and fourth echelons of supply as follows:

- a. Third Echelon supply is that phase of supply performed by specially trained personnel of technical service mobile units and/or fixed installations in the determination of requirements, acquisition, accounting for and distribution of authorized supplies and equipment to using organizations for initial issue, replacement, and replenishment, and to collateral third echelon maintenance units and activities for the accomplishment of their mission. Third echelon supply also receives from collateral third echelon maintenance activities those components and end items repaired in such activities for return to supply channels.
 - b. Fourth Echelon supply is that phase of supply performed by specially designated and trained mobile and semimobile technical service units and/or by specially trained personnel of fixed technical service installations in the determination of requirements for, acquisition, accounting for, and distribution of supplies and equipment to supported third echelon supply units and activities and to collateral fourth echelon maintenance units and activities for the accomplishment of their mission. Fourth echelon supply also receives from collateral fourth echelon maintenance units and activities those components and end items repaired in such activities for return to supply channels. This echelon is primarily an intratechnical service function in the supply distribution system.
3. Depot supply parallels depot maintenance and is that service authorized and prescribed to be performed by specially trained and designated semimobile and fixed technical service organizations and/or specially trained personnel of fixed technical service installations in the determination of requirements for, acquisition, accounting for and wholesale distribution of supplies and equipment to supported retail echelons of supply and to collateral depot maintenance activities. It also receives components and end items overhauled and rebuilt in collateral depot maintenance activities and returns such assets to the supply system. The performance of depot supply in the continental United States as well as worldwide stock control is the responsibility of chiefs of technical services

for materiel assigned to their respective services. Performance of depot supply in oversea commands is a command responsibility of the theater army commander. This category embraces the fifth echelon which is the highest echelon of supply.

Supply economy—The practice of conservation of material by every individual in the Armed Forces. It is developed through training and practice until it becomes habit. It includes conservation, maintenance, safeguarding, recovery, repair, and salvage of food, fuel, clothing, weapons, transport, and all other material.

Unserviceable supplies—1. All supplies which require repair, reprocessing, or modification prior to being included in stock on hand ready for issue. 2. Quantities that cannot be used because they are obsolete, worn, damaged, or otherwise not suited for the purpose intended.

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Ord Bn (3)
Ord Co (3)
Co (1)
Ft & Cp (2)
CGSC (50)
Eng Sch (50)
FA Sch (50)

Inf Sch (50)
SigC Sch (50)
Armd Sch (50)
AAA Sch (50)
QM Sch (10)
AG Sch (10)
MP Sch (10)
T Sch (10)
PMST ROTC Units (2)
Gen Depots (6)
Ord Sec, Gen Depots (6)
Ord Depots (6)
POE (6)
OS Sup Agencies (6)
PG (6)
Arsenals (2)
Mil Dist (3)
Ord Proc Dist (6)
Units organized under following TOE's:
9-500 (AA, AB, AC), Ord
Svc Org (2)
9-510, Ord Sp Svc Det (2)

NG: Same as Active Army except allowance is one copy to each unit.

USAR: Same as Active Army except allowance is one copy to each unit.

Unless otherwise noted, distribution applies to ConUS and overseas.

For explanation of abbreviations used see SR 320-50-1.